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ABSTRACT

These proceedings contain presentations and discussion group summaries from a conference to identify trends, issues, and new directions that will affect agricultural education during the remainder of the decade. The program appears first. Major presentations are "Shaping the Future: Our Purpose and Challenge" (Arthur L. Mallory); "Trends, Issues, and New Directions in Education Affecting Agricultural Education" (James A. Knight); "Trends, Issues, and New Directions in Society Affecting Agricultural Education" (Darrell Hobbs); "Trends, Issues, and New Directions in the Agricultural Industry Affecting Agricultural Education," a panel with the following papers: "Production Agriculture Perspective" (Charles Kruse), "Higher Education Perspective" (Roger Mitchell); "Agribusiness Perspective" (Ves L. Temaat), and "Rural Missouri Perspective" (Larry Harper); "What Are the Possibilities?" (Lowell Catlett); "The Challenge" (Doug Butler); "What Have We Said?" (Don Claycomb); and "Where Do We Go from Here?" (Frank Drake). Summaries are provided from these discussion groups: "Secondary Agricultural Education in the Public Schools (Rural Schools, Urban Schools, Area Vocational Technical Schools)"; "Postsecondary Agricultural Education in the Public School System"; "Adult Agricultural Education in the Public School System"; "The Development of Professional Teachers of Agriculture"; and "Agricultural Education in the Total Public School System." (YLB)

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Shaping the Future
of Agricultural Education

Proceedings of the Missouri Agricultural Education Conference

November 5-6, 1985 • Columbia, Missouri

Sponsored by the
Missouri Department of
Elementary & Secondary Education
Arthur L. Mallory, Commissioner of Education

CE 044357

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Conference Overview

Introduction

On November 5 and 6, 1985, the Missouri Department of Elementary and Secondary Education convened the state's first Agricultural Education Conference. More than 200 educators, legislators, farmers and agribusiness leaders gathered in Columbia to study and discuss the future of agricultural education in Missouri's public schools. The theme of the conference was "Shaping the Future of Agricultural Education."

Conference participants reviewed the issues facing the agriculture industry today; examined the status of agricultural education in the schools; and helped identify goals for agricultural education into the next decade. They accepted a challenge from Commissioner of Education Arthur L. Mallory to look for ways to help every Missouri school student understand the state's biggest industry and to ensure the schools are adequately preparing those who choose careers in agriculture.

The ideas generated at this conference are being studied in detail by the Department's agricultural education staff, the Conference Steering Committee, as well as teachers and teacher educators throughout the state. During the next several months, these ideas will guide the development of recommendations for improving the state's agricultural education program—recommendations which will be submitted to the State Board of Education in 1986 for consideration.

Because of the historical nature of this conference, and because of the wealth of information shared, the Department felt it would be worthwhile to publish a record of the conference proceedings. Following this introduction, readers will find a statement of the conference objectives, a list of the Conference Steering Committee members, and the conference program. The second section includes texts of major conference presentations, some of which have been edited for publication. The third section of this report summarizes all of the group discussions in a question-response format which we hope is concise and easy to follow.

The Department of Education would like to express appreciation to everyone who participated in the November 1985 conference. We are extremely grateful to those of you who interrupted busy schedules to help us in this important work. Special thanks are due the members of the Steering Committee, the discussion group leaders and resource people, the featured speakers, and the Agricultural Education Department at the University of Missouri-Columbia College of Agriculture.

Again, we thank you and hope you will find this summary to be a useful reference in the future.

—Dr. Terry Herman
Director, Agricultural Education
Missouri Department of
Elementary & Secondary Education
February 1986

Conference Objectives

General Objective

To identify trends, issues and new directions that will affect agricultural education during the remainder of the decade.

Specific Objectives

- *To provide for open discussion among representatives of groups that are directly related to and affected by future trends, issues and new directions in agricultural education.*
- *To identify and set priorities for specific issues and to develop a description for each issue.*
- *To identify and suggest activities, programs and/or procedures for adjusting to the trends, issues and new directions that will affect agricultural education.*

Conference Steering Committee

Dr. Margarite Boyd, Unit Director
Vocational Education Curriculum
St. Louis Public Schools

Dr. Jerry Crownover
Secretary-Treasurer
Missouri FFA Alumni Association

Arnold Davenport
Director of Secondary Schools
Kansas City Public Schools

Dr. James Eden, Superintendent
Chillicothe

Steve Fielden, President
Missouri Young Farmers Association

Grover Gamm, Member
State Board of Education

Kenny Graham, President
Missouri Vocational Agriculture
Teachers Association

Jake Greiner, Director
Division of Weights and Measures
Missouri Department of Agriculture

Brad Hasenjaeger, President
Missouri Association FFA

Dick Johnston, President
Missouri Farm Bureau Federation

Curtis C. Jones, Principal
Kansas City Technical Education Center

Stephen Mathis, President
Missouri Institute of Cooperatives

Dr. James Oblinger
Associate Dean, College of Agriculture
University of Missouri-Columbia

Denise Plassmeyer, President
Missouri Postsecondary Agriculture
Student Organization

Alonzo Robison
Adult Education Supervisor
O'Fallon Technical School

Wanda Roth
State Council on Vocational Education
Harrisonville, Missouri

Dr. Bob Stewart
Professor of Agricultural Education
University of Missouri-Columbia

Mike Vangel, Vice President
MFA, Inc.

Morris Westfall, State Executive Director
Agriculture Stabilization
Conservation Service

Program

Tuesday, November 5, 1985

11:30 a.m.- 1:00 p.m. Luncheon & Orientation for Discussion Leaders

1:00 p.m.- 1:30 p.m. **REGISTRATION**

1:30 p.m.- 1:45 p.m. **GENERAL SESSION**

Welcome

Introductions

Conference Orientation

Presiding ..... *Terry Heiman, Director*
Agricultural Education
Missouri Department of Elementary & Secondary Education

1:45 p.m.- 2:15 p.m. "Shaping the Future: Our Purpose and Challenge" ..... *Arthur L. Mallory*
Commissioner of Education

2:15 p.m.- 2:45 p.m. "Trends, Issues, and New Directions in *Education* Affecting Agricultural Education" ..... *James A. Knight*
Associate Professor, Agricultural Education
The Ohio State University

2:45 p.m.- 3:00 p.m. Refreshment Break

3:00 p.m.- 3:30 p.m. "Trends, Issues, and New Directions in *Society* Affecting Agricultural Education ..... *Darrell Hobbs, Director*
Office of Social & Economic Data Analysis,
and Professor, Rural Sociology
University of Missouri-Columbia

3:30 p.m.- 4:15 p.m. "Trends, Issues, and New Directions in the *Agricultural Industry* Affecting Agricultural Education"

Forum Moderator ..... *Terry Heiman*

Presenters:

- Larry Harper, Editor "Missouri Ruralist"
- Charles Kruse, Director Missouri Department of Agriculture
- Roger Mitchell, Dean College of Agriculture University of Missouri-Columbia
- Ves L. Temaat, Vice President Member Services Farmland Industries

5:30 p.m.- 8:00 p.m. **DINNER PROGRAM**

Presiding ..... *David Pearce, Director*
A.L.O.T. Program, University of Missouri-Columbia
and Former National FFA Officer

Invocation ..... *Brad Hasenjaeger*
State FFA President

Greetings from each VSO President ..... *FFA, PAS, YF/YFW*

"What Are the Possibilities?" ..... *Lowell Catlett, Associate Professor*
Agricultural Economics & Agricultural Business
New Mexico State University

8:00 p.m.- 9:00 p.m. **DISCUSSION/ACTION GROUP SESSIONS**
What Are the Issues?

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Program

Wednesday, November 6, 1985

7:30 a.m.- 8:30 a.m.	**BREAKFAST PROGRAM**
	Presiding ..... *Kenny Graham* *MVATA Past President*
	Invocation ..... *Denise Plassmeyer* *State MPASO President*
	Challenge to Participants ..... *Doug Butler* *Assistant Executive Director, National FFA Foundation*
8:40 a.m.-10:00 a.m.	**DISCUSSION/ACTION GROUP SESSIONS** *Defining and Resolving the Issues*
10:00 a.m.-10:20 a.m.	Refreshment Break
10:20 a.m.-12:00 noon	Resume Discussion/Action Group Sessions
12:00 noon-1:30 p.m.	**LUNCHEON PROGRAM**
	Presiding ..... *Wayne Sprick, Vo Ag Instructor* *Four Rivers AVS, Washington, Mo.* *and AVA Region III Vocational Teacher of the Year*
	Invocation ..... *State YF or YFW President*
	Discussion/Action Group Reports *Defining the Issues* ..... *Listeners*
1:30 p.m.- 3:00 p.m.	**RESUME DISCUSSION/ACTION GROUP SESSIONS** *Setting New Directions*
3:00 p.m.- 3:30 p.m.	**GENERAL SESSION**
	Presiding ..... *Terry Heiman*
	Conference Summary *"What We Have Said?"* ..... *Don Claycomb, Executive Director* *State Council on Vocational Education*
	Future Action *"Where Do We Go From Here?"* ..... *Frank Drake, Assistant Commissioner* *Division of Vocational and Adult Education* *Missouri Department of Elementary & Secondary Education*
3:30 p.m.	Conference Adjournment
3:30 p.m.- 4:30 p.m.	Conference Summary Committee Meeting *(Facilitators, Discussion Leaders, Recorders, Listeners and Resource People)*

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Discussion/Action Group Sessions

•Secondary Agricultural Education in the Public Schools
Facilitator: Doug Funk

1. Rural Schools

Discussion Leader—*Kenny Graham*
Recorder—*Jim Welker/Lowell McInturff*
Listener—*Stephen Mathis*

Resource People—*Grover Gamm*
Bill Waddell
Morris Westfall

2. Urban Schools

Discussion Leader—*Dr. Bob Stewart*
Recorder—*Dean Swafford*
Listener—*Arnold Davenport*
Presenter—*Dr. Ellen Summerfield, Principal*
Chicago High School for Ag Science

Resource People—*Margarite Boyd*
Phil Johnson
James Oblinger

3. Area Vocational Technical Schools

Discussion Leader—*Paul Turner*
Recorder—*Jim Lee*
Listener—*Paul Coffman*

Resource People—*James Eden*
Dan Reuwee
Wanda Roth

•Postsecondary Agricultural Education in the Public School System
Facilitator: Gene Eulinger

Discussion Leader—*Shirley Evans*
Recorder—*Mickey Briscoe*
Listener—*Henry Manson*

Resource People—*Bob Birkenholz*
Ray Hasenjaeger
Steve Payne
Rodney Scudder

•Adult Agricultural Education in the Public School System
Facilitator: Norman Rohrbach

Discussion Leader—*Don LaRue*
Recorder—*Dan Hill*
Listener—*Bob Denker*

Resource People—*Don Brandt*
Steve Fielden
Mike Goolsby
Steve Harbstreit

•The Development of Professional Teachers of Agriculture
Facilitator: G.W. Hamby

Discussion Leader—*Dr. W.R. Miller*
Recorder—*Paul Crews/Tony Asberry*
Listener—*Dwight Jones*

Resource People—*Anson Elliott*
Norman Justus
Bill Northcutt

•Agricultural Education in the Total Public School System
Facilitator: Gene Eulinger

Discussion Leader—*Marvin Hoskey*
Recorder—*Lyle Rowland*
Listener—*LeRoy Deles Dernier*

Resource People—*Betty Brommelsiek*
Jo Manhart
Grace McReynolds

Major Presentations

Shaping the Future: Our Purpose & Challenge

by
Arthur L. Mallory
Missouri Commissioner of Education

On behalf of the State Board of Education, thank you for joining us here. I want to again express my appreciation to the members of the General Assembly who are here. I never stop saying to my colleagues in the public schools that the "super board of education" is the Missouri General Assembly, by constitution and by law. It is the General Assembly that has the final governing responsibility for the public schools, colleges, and universities in this state.

I think we have the right mixture of people here. We have people who know something about issues related to vocational agriculture, Missouri agriculture, agribusiness, and all that it represents. You are here by invitation. We know who you are, we respect you, and it is our desire during this next day-and-a-half to be certain we have some good directions as to where we ought to be going in vocational agriculture and agricultural education in the State of Missouri. I was trying to think what in the world would a generalist like myself, a schoolteacher, have to say in a moment like this with all you experts. Here are several things of interest to me. Few states can match the diversity we have in Missouri. Missouri is the state where four major regions of the United States come together. The terms "back east," "out west," "up north," and "down south," have greater meaning if you are standing right here in Missouri. Each of these major regions either begin or end right here, depending upon one's point of view. The corn belt, with its commercial farms, small towns and cities, dips down to the Missouri River. The south, with its cotton fields, hills, timber, and small farms, comes all the way up to the Missouri River. The west begins either at St. Louis or St. Joseph, depending upon which history book you want to read.

So Missouri is east and west, north and south, corn belt and sun belt, big cities, small towns, timber and prairie, high technology and home crafts, big farms and small farms. We have it all. Somebody once said that if you built a wall around every state in the United States, there is probably one that could survive, and that is Missouri, because of our diversity.

We, in Missouri, have always been sort of in the middle, we have been average, if you'll take any national statistic. But, in several areas, we are extraordinary because we are visionary, and we ask ourselves "where do we go from here?" One area in which Missouri is totally ahead is in our work with young children. We have just finished a piece of research, for example, that is of interest to me. I

am a grandfather. My imperfect son, Chris, who lives here in Columbia, married a slightly more perfect young woman from Palmyra, and these two imperfect kids have had two perfect children. You know I'm interested in young children, little boys and girls. We now know that the best dollar spent in education is spent from birth to six or seven years of age. The most important teachers in every person's life are his mother and daddy. Second only to them is the primary schoolteacher. We now have the research which proves that, if we do a good job with mothers and daddies during the last trimester before birth and during the first three years of life, we have the best chance in the world of getting kids off to a perfect start. That good start at the age of three will last up to seven and eight years of age.

We know something about educating the gifted in Missouri. I take the position that if we don't do something significant for the most gifted of our children, we will never kill cancer. You can't kill cancer by trying to "average everybody out." We'll never have the poetry, the great art, the great thinking, the great literature of the future.

We're ahead in some of these areas, and what I would like to do as a result of our visit here today is find a way to get ahead in the business of agricultural education. Why not? Why would we, in Missouri, wait for some other state to tell us the direction? We don't want everything to start on the east and west coasts. Wouldn't it be appropriate, ladies and gentlemen, for the State of Missouri to do the clearest, most decisive thinking about the role of agricultural education for the next decade?

Terry Heiman has suggested that we ought to be thinking about the role of agricultural education for the remainder of this decade, and I suspect that is probably the right challenge. But, as you know, change comes slowly. It is difficult to make adjustments, and once we have decided on something, we probably are going to have to live with it for a little while. What are some of the issues and some of the trends? What are some of the things that need to be happening to us in agricultural education?

I recognize that I'm not an expert on agriculture, but if only by heritage, I know something about it. My grandfathers, great-grandfathers, and great-great-grandfathers all had 40 acres apiece in Wright County, and they farmed. They didn't go to school much. One had a second- or third-grade education, and one great-grandfather, Sam Claxton, had an eighth-grade education. He taught a term of school periodically. But, all of them were farmers. My grandpa, Bill Mallory, raised nine kids on 160 acres in Wright County. Daddy and I were talking about that just the other day; I was telling him about this conference, and I asked him, "What do you recall?" Daddy recalled that Grandpa, with his 160 acres, was able to very modestly raise nine kids and get them through high school. He said the farming was diversified. My grandfather, Jason Claxton, also was a farmer; he had a tenth-grade education and was a schoolteacher as well. He had 240 acres. All four of my great-grandfathers and my two grandfathers lived in the same county.

How would my great-grandparents react if they could come back and take a look at farming today? It wouldn't take them long to catch up because the human mind can do that, but it would be shocking for them. The question is, though, what kind of plans are we going to make so there can be appropriate gains and adjustments? What plans can we make so that if we were to go to sleep and come back 50 or 60 years from now, we wouldn't be shocked and would still be going in the right direction?

There are 13,000 high school students in vocational agriculture in Missouri right now. What program should we teach these kids in our vocational agriculture and public secondary schools? What program do you want them to have? Can anybody visualize it? Are we always going to teach big farm operations? It has long been my belief that if agricultural education in Missouri limits itself to large farming operations, we will soon be out of business. Fewer farmers are producing higher proportions of the state's agricultural output today. Only 8% of the farms account for over 50% of the farm product sales. So, if we teach only row crops, hogs, cattle, and sheep, we're going to be out of business during the next little while. I think that's clear.

Something else is going to have to be a part of at least the high school level. The business of agriculture taught through small acreage operations is an alternative. I've always thought we ought to teach our kids to farm a half-acre or one-acre plot. Teach them to produce some of their own food; to learn how to dry it and can it. Teach them to live with agriculture, and we will probably be able to increase the number of youngsters who could gain from the agricultural education program from 13,000 to 50,000 at the high school level. But, if we keep it the way it has always been, we are not going to be productive or useful to the youngsters in the State of Missouri. But, if we could think about doing something with kids who are going to live and need to produce a garden, I think that would be good.

I realize that somebody is going to say, "Mallory, what are you thinking about? That's not agricultural education." Let's make it agricultural education in the next little while. The single-acre plot is a pretty important concept.

I can remember during the Second World War, when my father was superintendent of schools at Buffalo, we opened a cannery, and the people came from everywhere and did their canning, right there at the schoolhouse. Do you remember the victory gardens during the Second World War? We went to Detroit, Michigan, to see an uncle and aunt during the middle of the War, and every open plot was being farmed as a victory garden. Let me tell you what I think happened. In those days, ladies and gentlemen, people across the United States clearly saw the relationship between their canned beans and what they had on the table. I believe they understood consumer agriculture as perhaps we don't today.

One of the biggest things we need to do in the future is have clear thinking about the consumer part of agriculture. You know we have whole communities full of kids who have no concept about where their food comes from, and they do not have a feeling for the number-one industry in the State of Missouri. We haven't capitalized on that concept, and we haven't taught the people in our elementary and secondary schools. We haven't taught families the relationships between a good farming operation and a victory garden; between the canning process and their happy living with good nutritious food. Now, is that part of the future of agricultural education? I don't know what the professors and the teachers think, but it seems to me that if we are going to be able to make ourselves important in the field of agricultural education, we must cater to more than 13,000 kids. We're going to have to have a great number of people who depend upon us, and that's going to require a change in the curriculum; a change in the scope; a change in the content. Consumer agricultural education may be one of the biggest things on agricultural education's horizon.

Let's not diminish the need to do other things. Let's take nothing away from good row crops or from the rest of the industry, but recognize that if we keep the curriculum where it presently is, we're going to be out of business.

We have Fred Heinne, president of the board of education in Kansas City, here at this meeting on purpose. We have the City of St. Louis represented here. Why can't we figure out some things to do for youngsters in those big cities that will be worth a great deal to them? Is anybody thinking that agricultural education is just out there in Buffalo, Missouri, my hometown? Can't we visualize something that would be productive for all the kids in those cities?

Let me tell you why I'm interested. I go to the FFA Conferences, I watch those young ladies and gentlemen standing there in their blue jackets, and I get a lump in my throat. The teachers of the kids involved in the FFA do a grand job with those kids. They stand up, they act right, and they look good. We have no trouble with these kids. Why don't we see to it that every youngster in Missouri, or at least more than now, have the advantage of that kind of instruction?

If we keep agricultural education the way it has always been, we are out of business. The reason we are here together is not for me to tell you anything, but for us to ask you where to go from here. We can't take a chance; we can't just let it happen to us. It is time to stop and do whatever is necessary to get ourselves moving in exactly the right direction. The direction we are presently going is not a wrong direction. But, I think we need to take another look and visualize more broadly to see exactly where we are going. As we think about agricultural education relating to the industry of agriculture, it is too important to take a chance. We need to have the best thinking possible to plan for the future, to move according to plans, and to show the whole world that the best place to look at agricultural education is in Missouri.

That is our reason for being here; it is the only reason we have. We're grateful to you for your willingness to come and work with us on this project.

Trends, Issues and New Directions in *Education* Affecting Agricultural Education

by
James A. Knight
Associate Professor, Agricultural Education
The Ohio State University

Review of Reports

Introduction

Several years ago, when the National Commission on Excellence in Education released its now famous report, "A Nation at Risk," education became front-page information. As a result, many research studies and other commissions were spawned to further enlighten or to respond to "A Nation at Risk." The results of that massive study and work are still being felt today and will continue to affect educational programs in the foreseeable future.

Agricultural education programs have not been and will not be exempt from the impact of these various studies and reports. It would seem appropriate then to summarize these reports, and then to identify the implications that these findings might present for agricultural education programs today and in the future.

In reviewing 14 of the major reports, three major categories of suggestions appear to surface with numerous recommendations under each category. Those categories are curriculum and standards, teaching, and organization.

Curriculum and Standards

Following is a review of the reports with regard to the broad area of curriculum and standards. The numbers in the parentheses represent the number of reports that made the recommendation.

The need for curriculum revision in schools (8) was a general concern for those looking at education. Specifically, it was suggested that requirements in schools should be strengthened in the areas of English (8), math (10), science (10), social studies (9), technology/computer science (8), and to a lesser extent, foreign language (4), art and music (5), and physical education (3). The reports suggested that vocational education and work courses be revised (8) and that education should begin earlier (3). Special help for the gifted and talented (6) should be offered, as well as special help for the slow learners (8). Some agree that there should be a core curriculum (6) in schools, and two (2) of the more influential reports suggested that outside learning opportunities should be incorporated into the

curriculum. Reasoning skills should be emphasized (9), and the textbooks should be improved and upgraded (3). Wherever possible, tracking should be eliminated, and groups should be tested for mastery (6).

The idea of raising collegiate admission standards (5) and raising expectations of students (8) has good support for the improvement of education. It was further suggested that, before students be promoted or graduated, they should be tested (7), that discipline should be increased (6), and that more homework should be assigned (3).

In summary, the reports suggest that, in the area of curriculum and standards, an emphasis should be placed upon "basic" skills. High expectations for all students and extra help for those who need it is very important. The reports also emphasize the importance of reasoning skills such as problem-solving ability.

Teaching

Some interesting recommendations were made in the area of teaching. Generally, the reports suggested that salaries should be raised (8), that career incentives should be provided (6), that teacher education programs should be strengthened (8), and that there should be incentives offered to attract high-quality teachers (6). There should be a better way of recognizing outstanding teaching (6), and somehow the evaluation and testing of teaching should be improved (6).

The reports appear to represent a fairly strong opinion that teachers should have more control with fewer administrative burdens (8). In addition, a deep concern seems to exist about the quality of teaching in math and science (6).

In summary, the reports focused on the need to provide greater recognition and incentives for teaching. At the same time, they expressed the desire to somehow evaluate instruction more appropriately while providing teachers with greater autonomy.

Organization

The following kinds of suggestions were proposed in the area of organization (10). Some (4) reported that the school work environment should be improved, and most (8) suggested that there should be a general improvement in school leadership and management. A few (3) believed that the school day and/or year should be lengthened, but more (5) simply suggested that existing school time should be used better. Just as many (5) proposed a reduction in class and school sizes.

Increased involvement of business and community (8) was strongly supported, with increased parental involvement (3) receiving less attention. Many (6) believed that the link between secondary schools and colleges should be strengthened.

Governance of schools and funding responsibilities were generally seen as a local (4) and/or a state (4) issue. However, the federal role was cited as important in the area of research (6), information and data collection (5), and for very special kinds of projects (8). In addition, the provision of equity and civil rights (5), the support for teacher training (5), and the identification of national initiatives (5) were generally seen as important for the federal government.

In summary, school climate factors, such as smaller classes, better discipline, a more businesslike use of time, and better school leadership, were identified as important. The need for greater and more appropriate business and community involvement was seen as especially important. Finally, the responsibility for schools was generally seen as a local and state issue with the federal government getting involved in special issues, research, and teacher training.

Implications for Agricultural Education

Introduction

Agricultural education does not exist in isolation from the rest of education, and as such, must be responsive to the influences being felt by all of education. To do otherwise would almost surely spell the undoing of the program. The question to be answered here is, "How are the responses that are being precipitated in education affecting agricultural education?" In addition, another question to answer is, "How should agricultural education respond to these pressures?"

Curriculum and Standards

In the broad area of curriculum and standards, it would appear appropriate that agricultural education take a hard look at the content of its curriculum. Should vocational agriculture programs focus primarily upon production agriculture? Perhaps a greater curriculum question, however, focuses on not just the content, but the mission of that content. Is the sole purpose of vocational agriculture programs at the secondary level to prepare students for work or is it to prepare them for life which includes work? Research done at the University of Minnesota on the purpose of secondary vocational education would suggest that a broader mission for vocational programs at the secondary level should be considered. This would not mean eliminating skill training, but rather than making the skills the end product, they would become the means to an end. In other words, the skills would be the basis for the relevance of the curriculum. In addition, the opportunity to develop employability skills appears to be an area which deserves attention.

Another curriculum area where there is a growing demand is computer instruction. A concern arises about use of that technology: Will students still learn basic skills or will the computer mask that need?

One of the fundamental notions related to the success of students is having high expectations of students. This is reflected in the kind of work given to students and how that work is evaluated.

Teaching

It would appear that agricultural education needs to find ways to keep highly qualified teachers in the field and to attract potentially outstanding teachers. This means that higher salaries will need to be provided for teachers of vocational agriculture just as with other educators. In addition, clear career incentives are needed to reward good teachers and to encourage them to stay in the profession.

Currently, teachers of vocational agriculture are recognized for teaching 5, 10, 15, 20 years or more, and most states recognize outstanding young teachers by district and perhaps an outstanding vocational agriculture teacher for the state. However, it would appear that an expansion of that recognition program might be in

order to create incentive for recruiting and retaining those excellent teachers. In addition, with the current emphasis upon the back-to-basics movement in schools, it will be more difficult to procure teachers from the world of work who have experience but lack the kinds of preparation and skills necessary to teach the basics. While such persons may have good technical skills, they often are not as strong in the basic communication skills.

Teacher education programs must work hard to recruit and to impress upon young teachers the importance of problem solving, supervised occupational experience, Future Farmers of America, and adult education in the vocational agriculture program. It is especially important to stress the problem-solving approach in teaching, given the general findings of the reports cited here.

With the increased emphasis on college standards, vocational agriculture teachers must consider the traditional program model where students were in class for an hour per day as opposed to larger blocks of time. The demands upon secondary students are going to continue to increase or have increased to such an extent that to schedule them in longer periods of time almost certainly will guarantee a lack of enrollment in the program.

Organization

"A Nation at Risk" and other reports suggested that school days be lengthened. However, when all of the reports were in, many more suggested that schools simply needed to use the available time better. In vocational agriculture programs, particularly those organized around larger blocks of time, the pressure will be on to make sure that the time is used well, that basic skills are being provided, and that students are actually learning.

Vocational agriculture programs have traditionally had advisory councils. However, it appears that tradition has waivered somewhat. It is time to reconsider advisory councils and make them work. They will be fundamental to the success of programs in the future. In addition, we should reach out to adults through adult education and the FFA Alumni organization and make every effort to bring the people to the schools.

Conclusions

When reviewing the mass of literature that has been generated on school improvement since the National Commission on Excellence released the historic report "A Nation at Risk," it is clear that major thinkers and writers have expressed significant concerns about the education. These concerns have been translated into recommendations that have affected all areas of education. Vocational agriculture programs certainly are no exception.

Three major expectations for educational programs transcend subject matter boundaries: All programs should teach students how to be self-disciplined, how to solve problems, and how to transfer learning. All subject matter should somehow contribute to these broad purposes of education.

Teaching through the problem-solving approach, using supervised occupational experience programs, and working on personal development through FFA offer a framework upon which to base the search for excellence. Within that framework, teaching basic skills, having high expectations of students, involving business and the community, and improving the general school climate, all appear to be fallow ground for vocational agriculture.

REPORTS REVIEWED

A Nation at Risk

Action for Excellence

Making the Grade

Academic Preparation for College

A Place Called School

High School

Horace's Compromise

Educating Americans for the 21st Century

America's Competitive Challenge

Education for Tomorrow's Jobs

The Paideia Proposal

High Schools and the Changing Workplace

An Open Letter to America

Meeting the Need for Quality Action in the South

CURRICULUM AND STANDARDS

Recommendation	Reports Making Suggestion
Revise Curriculum	8
Strengthen Requirements	
English	8
Math	10
Science	10
Social Studies	9
Technology/Computer Science	8
Foreign Language	4
Art, Music	5
Physical Education	3
Revise Vocational/Work Courses	8
Begin Education Earlier	3
Offer Special Help for Gifted and Talented	6
Offer Special Help for Slow Learners	8
Set Core Curriculum	6
Incorporate Outside Learning Opportunities	2
Emphasize Reasoning Skills	9
Upgrade/Improve Textbooks	3
Eliminate Tracking/Group by Mastery	6
Raise College Admissions Standards	5
Expect More of Students	8
Test for Promotion/Graduation	7
Increase Discipline	6
Assign More Homework	3

TEACHING

Recommendation	Reports Making Suggestion
Raise Salaries	8
Set Career Incentives	6
Strengthen Teacher Education	8
Offer Incentives to Attract	6
Recognize Outstanding Teachers	6
Strengthen Evaluation/Testing	6
Provide More Control/Fewer Adm. Burdens	8
Improve Math/Science Training/Teaching	6

ORGANIZATION

Recommendation	Reports Making Suggestion
Improve School Environment	4
Improve School Leadership	8
Lengthen School Day/Year	3
Use Existing School Time Better	5
Reduce Class/School Size	5
Increase Parent Involvement	3
Increase Business/Community Involvement	8
Form School/College Links	6
Governance/Funding Responsibility	
Local	4
State	4
Main Federal Role	
Research	6
Equity/Civil Rights	5
Funding Specific Projects	8
Information/Data Collection	5
Identification of National Initiatives	5
Teacher Training/Support	5

Trends, Issues and New Directions in *Society* Affecting Agricultural Education

by
Darrell Hobbs
Director, Office of Social & Economic Data Analysis
Professor, Rural Sociology
University of Missouri-Columbia

My topic--trends and issues in society--really gives me an excuse to talk about Missouri. I think what is going on in Missouri is a reflection of what is going on in the rest of the country. Since we're going to spend some time looking at the future, I thought it might be helpful to spend a few minutes looking back at what things were like here in Missouri in 1960.

First of all, we had no interstate highway in 1960. There were no Simmentals, Chianna, and Limousins. There were computers, but they were few and far between, and they filled up the whole room. They required air conditioning, had about the same capacity as a micro, and cost several million dollars. Offices were converting from manual typewriters to electric. There were no foreign cars, but we had Studebakers and Edsels. There was no energy shortage, and nobody had heard of Saudia Arabia or OPEC. The United States led the world in the industrial production of steel, cars, and chemicals. There were few factories in rural areas. Futurists were talking about one-third of the United States population being located in a megalopolis from Washington, D.C., to Boston. The people left behind were in the presidential report on rural poverty, at that point, and were those who lacked the skills or were too old to make the transition to a metropolitan area.

There were no fast food restaurants, no McDonalds, no Hardees or Long John Silvers. There were no discount houses or shopping centers. There were no MasterCards or Visas. There was no Medicaid or Medicare. Social Security coverage was extended to relatively few people, and the benefits were minimal. There were no condos, manufactured housing or recreational vehicles. Farm tractors, at that time, had letters rather than numbers. (When they quit making As, Bs, Ms and Hs, and WDs, I lost track of tractors.)

Wasn't the world a whole lot simpler then? An A was bigger than a B. The was no Sun Belt, no Frost Belt. These are words we coined in recent years to reflect social changes going on in the country. There had been no open-heart surgery, organ transplants or brain scans. There was no birth control pill. There had been no hostage crisis or plane hijackings.

Now, I'd like to deal briefly with a few trends that have emerged since 1960. Glancing back over my little list, you realize, as one author once said, "Nothing so much escapes our attention as that we take for granted." Think how much we take

for granted today that didn't even exist in 1960--the interstate highways, direct-distance dialing, satellite communications, so many things that have really become a part of our lives. So, as we look ahead, even 10 or 15 years from now, I think we really need to be prepared for substantial and fundamental changes. Someone once commented, "The future is not something that's going to happen to us, the future is something we are going to create." I think that is very important to remember because trend lines are just lines on a map or a chart. A trend line just represents what a lot of different people do--individuals as consumers, as housewives, as farmers, as business people, and so on; you add up all these things, and that's what makes up a trend line.

The futurists around the country in the 1960s were predicting the demise of small towns and that a third of our population would be living in that corridor from Washington to Boston. Those things did not happen. In fact, beginning about 1970, the population started leaving, and that part of the country became known as the Rust Belt. So, I don't think that we should be too quick to accept some predictions and to assume that they will happen regardless of what we do to change or modify them.

One thing that has been happening, and that I think will continue to happen, is what we might call urbanization of rural Missouri. Rural Missouri is becoming increasingly urban in terms of lifestyle, of who lives there, where people work, the kinds of economic activities to be found there, and so on. This change has been stimulated by the fact that a lot of metropolitan people move to our rural areas to retire, bringing with them a different set of ideas, thoughts, and aspirations.

It is very important to note that, over the last 15 years, manufacturing employment has become the single largest source of rural income in the country and in Missouri. Manufacturing employment has become the largest source of rural income here in Missouri, primarily because shoe and garment factories have moved to the rural areas. The shoe industry used to be located in St. Louis, but now it is located throughout the Ozarks. Some are concerned about protecting the shoe industry. The possibility that the shoe industry may move outside the country is an indication of another trend--the internationalization of our economy. We're not just seeing the urbanization of rural areas, but the internationalization of our whole economy. Think for a moment about the soybeans from Carroll County or Chariton County that never go through a small town, but go directly to a river port terminal and directly into the international trade stream.

Another trend that will affect the preparation of youth to enter our economy is the shift from the production of things to the production of services. We use the word "services" all the time. Think of the services involved in food preparation. The greatest employment growth in recent years has been in the service-oriented industries. Schoolteachers are in the service business. Insurance adjusters, computer programmers, and state legislators are all in the service business. In both rural and metropolitan America, we experienced about a 20 percent decline in manufacturing employment during the 1970s and about a 15 percent increase in service employment. In metropolitan areas, service-related employment exceeds manufacturing employment by about 3 to 1; and in rural areas, the ratio is about 2 to 1.

Consequently, rural areas have become much more dependent on economic forces and factors that they have very little control over, and that probably will continue to

be true in the future. Today, a community does not control its own economic base. Economic decisions, whether they are related to agriculture or a decision to relocate or move a manufacturing plant, very often are made elsewhere. Even the people who move to our rural areas and bring their retirement income with them may well move again if they feel it is in their best interest.

Missouri is a very diverse state, and rural Missouri is becoming even more diverse. Some of the most rapidly growing areas in the state are rural--around the Lake of the Ozarks, south of Springfield. The growth rates, both in terms of employment and population, exceed those in the metropolitan areas, but we also have rural areas where the population is declining again, largely because of the farm crisis.

Missouri continues to be a state of very urban areas and lots of small towns. Overwhelmingly, this is a small-town state, and it will continue to be so. We have 500 towns in this state that have populations less than 500. A lot of people have been saying that those towns are going to disappear, but they started saying that in 1900, and in 1920, and in 1940. The towns are definitely different today, but they are still there. I think small-town life is one reason rural Missouri is so diverse. We have a lot of affluence in the rural areas--take a look at the construction going on around the Lake of the Ozarks. We also have a significant amount of poverty in rural Missouri.

Economic differences between areas affect opportunities. High school kids used to graduate with a bus ticket in one hand and their diploma in the other. But today, more young people are taking a second look at their choices, and many are opting to stay closer to home. The fact that older brothers and sisters have made that trip is encouraging some to stay closer to home. Lots of people are making that decision and adjusting their economic aspirations accordingly.

The population of rural Missouri has spread out in recent years. One good indication of this change is to ask yourself when you are driving I-70 from Columbia to St. Louis, "When do you get to St. Louis?" It's an arbitrary decision. The economic activity in St. Louis keeps spreading out; the boundary used to be Wentzville, then it got out to Warrenton, and now you can more or less take your pick. The same thing is true driving west from Kansas City. If you shade in the commuting areas around Kansas City, St. Louis, and Springfield, you account for about 40 percent of Missouri's population. By commuting areas, I mean places where people live in small towns and regularly drive 40, 50 or 60 miles to work every day, and back. That pattern of growth has had a substantial effect on rural Missouri and is expected to continue.

We have passed a time in the early 1970s when there were slightly more than one million elementary and secondary school students in this state. That number has dropped substantially during the last 12 to 15 years to three quarters of a million students. By the way, there is more than an offsetting increase in the number of people who are enrolled as part-time students in adult programs. I think we are going to be part of a future that redefines "student"--what students look like, how old they are, and when they go to school. By the year 2000, it looks like there will be about a five percent increase in the number of people age 5 to 29 in rural Missouri. Obviously, that growth will not be uniform; a number of rural areas will continue to decline, while others will have offsetting growth.

You can't talk about vocational education without calling attention to the most substantial change in our labor force this century--the incredible increase in

women entering the labor force since the late 1960s. We are rapidly approaching the time when our labor force will be 50-50. When you think of the typical American family, you might remember Dick, Jane, Sally, and Fluff; a father who went to work each morning and a mother who stayed home. That's not the standard family anymore; that's not the norm.

Today in Missouri, about 60 percent of the women with preschool children are in the labor force, working outside the home for pay. That number has more than doubled since the late 1960s. This has created new types of jobs. For example, there is a whole new demand for day care, for restaurant meals, and for home services.

Furthermore, only a third of the women in the labor force today are working in jobs that we once considered typical, female jobs--secretaries, nurses, et cetera. There has been a tremendous diversification of the jobs held by women. I see two reasons for this. First, as we have moved toward a service-based economy, physical strength has become less of a factor in a job. Second, there's the matter of income. We recently took a look at family income here in Missouri. If you eliminate the inflation factor, average family income in this state did not increase between 1970 and 1980, but the number of two-worker families increased from 45 to 60 percent. So when you hear people say that they are running harder to stand still, it's very much the case. This has tremendous implications for us as we prepare people for the labor force through training and retraining.

Today, the new buzz words are entrepreneurship and small firms. Word has gotten around that almost all of the new jobs in this country are being generated by small businesses that employ fewer than 20 people. Here, in Missouri, 88 percent of the private sector businesses--nonfarm private sector businesses--employ fewer than 20 people. We have nearly 100,000 such businesses in the state, and the number is growing. I would like to call your attention to the fact that vocational agriculture training has long emphasized management and entrepreneurship. So, from the standpoint of general vocational preparation, some of the things that have been incorporated into vocational agriculture training in the past, rather than being out of date, may well be important components of our future economic growth and development.

I'd like to call your attention to another trend that has implications for education: We have moved to what is referred to as a multiple-options society. At one time, we knew who was married and who wasn't. We knew who was a student and who wasn't, who was employed and who wasn't. Just think of all the people that you know today who don't fit into those neat categories. Is someone a student, or are they employed? If you are employed, does that mean you work outside the home? Look at the increase in self-employment. We have moved from being locked into one thing or another to the point where the people are several different things at the same time. This suggests that we are becoming a society in which the breadth of preparation is going to be as or more important than the depth of preparation. In the past, we placed a great deal of emphasis on specialization; now the future belongs to the generalist, the one who has a variety of skills and is able to take advantage of economic opportunity where it exists.

Recently, I have noticed a rather subtle change in the way we talk about economic development. You seldom saw the term "human capital" being used back in the 1960s. Today, that term is used all the time. We are really talking about equipping a person with a bundle of skills that will enable him or her to take advantage of economic opportunities that are not even here yet.

References were made earlier to the Rural Missouri 1995 Task Forces. It was interesting to note the number of task forces, which recommended more active public/private sector partnerships and cooperation in the future. I think we've grown accustomed to a time when the schools do their thing, the health department does its thing, and the hospital does its thing. But more and more often, we're seeing active collaboration between the public and private sectors, whether in the name of economic development or community development. As we look at the public school's agenda for the future, there will be more interaction with the people in the community and with people outside the school. The schools will rely on advisory committees and other activities for help in providing the educational program and deciding on objectives.

I will close with something I mentioned earlier: The future is not something we are going to discover; the future is something we are going to create. I think one of the challenges we face is using the things that we have learned to do so well in the '60s and '70s to change conditions in the 1980s and 1990s.

Trends, Issues and New Directions in the *Agricultural Industry* Affecting Agricultural Education— The Production Agriculture Perspective

by
Charles Kruse
Director
Missouri Department of Agriculture

It's a pleasure to be here with you this afternoon. I want to commend the people who have put this first-ever meeting together. I think it's a real tribute to agriculture and a tribute to all of you here. I have seen a lot of state legislators here today; I think it's noteworthy that they are here. It has been a pleasure for me to work with the Legislature and to see that there is a genuine interest and concern for agricultural issues.

As you know, agriculture has experienced numerous challenges and changes in the past. Today, we are facing some of the toughest challenges since the 1930s. Production agriculture has met many of those challenges head on, and I feel that the present and future challenges will be met in much the same manner.

In 1933, one-fourth of our population lived on farms; today, less than 3 percent of our population live on farms. In 1935, there were 278,000 farms in our state; today, only 115,000 farms exist. However, the 115,000 farms, plus their workers, produced more than twice as much wheat and three times as much corn on a million less acres than their counterparts did 50 years ago. Farmers, today, also produce enough food to feed themselves and 77 other people. In 1900, they produced only enough to feed themselves and nine others. As you can see, these statistics show the tremendous progress in agricultural production.

How has production agriculture changed? If you look out across fields today, you see huge tractors and huge combines working on the horizon. Fifty years ago, that speck on the horizon would have been a farmer pulling a one-bottom plow with his best friends, two draft horses named Pete and Joe. That farmer would work from dawn to dusk in hopes of getting a few acres plowed--that was if old Pete and Joe didn't get spooked and run off through the woods forgetting harness and all. Today, it is not at all uncommon for one man with one tractor and disk to disk more ground in an hour than his father or his grandfather would have covered in a whole day.

Along with the ability to farm more acres came the research, technology, and innovations in agriculture that have made our farmers so envied across the world. In 1933, corn averaged only 25 bushels per acre, and wheat 15 bushels. Fewer than one million bushels of soybeans were produced in 1935. This year, it is estimated that as many as 181,000 bushels of soybeans will be harvested, which equals a

record state yield of 35 bushels per acre. During the last decade, soybeans worth more than $8½ billion have been produced in Missouri.

Missouri corn production has been forecast at 258 million bushels this year, up 67 percent from last year. That's an average yield of 106 bushels of corn per acre, compared to only 80 bushels per acre last year, and 51 bushels in 1983. Even in the drought year of 1983, Missouri farmers averaged more than twice as many bushels of corn per acre as the farmers of 1933.

Wheat farmers averaged 15 bushels per acre in 1933. In Larry Harper's Missouri Ruralist, a couple of issues ago, we read about some farmers right here in our own state that are planning to break the 100-bushel barrier. Some have already done it, and we're going to have, as Larry stated in his magazine, a lot more in the future.

What are some of the other changes that have taken place in production agriculture? Well, with the advent of large yields and large production capabilities came the ability of our nation's farmers to produce more than our country could consume. This put production agriculture into the world export market. That market grew to its record peak of $44 billion in 1981. That year, our exports furnished our country with a $26.6 billion agriculture trade balance, which greatly benefited the overall economy. Our exports have gone down considerably since, to only an estimated $32 billion this year, but our trade balance surplus will still benefit our national economy by a positive $14 billion. This has made agriculture by far the most important industry in the United States.

Years and years of trial and error and research have paved the way for these production agriculture breakthroughs. Herbicides, high-analysis fertilizers, and genetic engineering are but a few agricultural tools that have given us our productive capacity. Researchers are now working on nitrogen-fixing corn similar to soybeans and alfalfa. Herbicide-tolerant corn will be available to farmers within five years. Studies are being conducted now to see if 30 percent increases in milk production over a full lactation cycle can be accomplished. Research says that it can. We now have superovulating livestock that can produce more offspring per year than could ever be expected. Embyro transplants are commonplace today, and new, stress-tolerant plant varieties are being researched continually.

All these innovations and more have helped change production agriculture. The change has been very positive. The world population has definitely benefited from such advances in our nation's production agriculture. We now have a world population of four and a half billion people. It is estimated to be six billion by the year 2000. Our food requirements will double between now and then. Three-quarters of our expanded food production must come from increased yields. Our production agriculture system is progressing by leaps and bounds to accommodate the food supply that we will need. A concerted effort by farmers, legislators, and educators will be needed to keep production agriculture on its avenue of success. More changes are coming, the 21st century will bring unheard-of achievements, higher yields, greater animal production, innovative approaches to disease resistance in both plants and animals, herbicides that will absolutely astound us with their selectivity, and astonishing engineering feats.

Trends, Issues and New Directions in the *Agricultural Industry* Affecting Agricultural Education— The Higher Education Perspective

by
Roger Mitchell
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What is an educated person? You can spend a long time pondering that question, but my good friend Jim Oblinger says it so well that I wanted to quote him: "An educated person is one who is adaptable to change, expects change, and is prepared for change." I compliment you on investing the time to think about how we can help students in the future be prepared for change. That, I believe, is indeed an exciting opportunity.

How can we help these youngsters develop a global view? I have taken to watching television a little more in the early morning. I am impressed with all the problems they report from around the world. How do we communicate that to these youngsters? I don't think they will get it by watching the evening news. They will need to understand the global economy, which encompasses food and agriculture.

As members of this global society, our students must have well-developed interpersonal skills. We must help them develop every possible communication skill. At the university, we are stressing writing across the curriculum. I hope that each one of you vocational agriculture teachers are urging your students to write every chance you get. Students must have every opportunity to hone their writing and speaking skills, their interpersonal skills. Also, be sure you are blending in computer science in the proper way at the appropriate point in your system.

We are in a mighty important, diverse, and exciting industry. Twenty-three percent of the work force in the United States is associated with food and agriculture. Representing 20 percent of our gross national product--a significant factor in our balance of trade or our attempts to balance our trade--agriculture and food are important. Those of us who grew up traditionally, on a farm and involved in 4-H and vo-ag, often have a production orientation. We want to teach students about crop production. The challenge we face is remembering that the food and agriculture business is diverse, that it includes the folks who are going to serve us food at the banquet tonight. It includes the folks who are going to process that food beyond the farm gate. One of FFA's slogans was "agriculture is more than farming." We need to work, work, work to help these youngsters understand the background material in that green-covered booklet. Fifty percent still think of themselves in terms of production agriculture; that's less than in the past, but

it's still more than will have that direct opportunity. What can we do to expose them to these other opportunities and possibilities?

It has been emphasized that this is a very diverse state. Professor William Albrecht used to say, "The four corners of the earth hold together in Missouri." That diversity in soils brings diversity in the kinds of culture and the kinds of agriculture and the kinds of communities that have developed here. We have to take that diversity into account. I refer to "a stratified farm and rural population." We have an outstanding production enterprise, and they are going to be out there in the future. Some may take on a very specialized enterprise that may not be enormously large in gross product, but that will be good. Then there will be those who, like the 80 percent of our farm families who gross less than $40,000 a year, are going to derive 63 percent of their income from off-farm sources. We have to get them ready, too. But ready for what, we are not sure.

The change continues. The ideas we have shared about communication skills, the ability to adapt, and developing a global view, will help our students in the future. We need to remember that there is about $4 billion in annual farm income and about $17 billion in agribusiness income in Missouri. We do need, first of all, to serve the commercial farmers. Pick a size--a $100,000 gross, a $250,000 gross, whatever you wish--that group is going to produce the food for the U.S. population and for our export demand. We must serve that group through the efforts such as the university's Food for the 21st Century program. We must drive down the cost of production to benefit the consumer. Make no mistake, it is the consumer that benefits by the public investment in agricultural research and extension. That is clearly one responsibility that each one of us shares in our own way.

We have a lot of folks out there on the rural landscape who want to live there and who have the right to some information about how they enjoy a reasonable income and quality of life. How do we serve those folks?

How do we respond to all this diversity? How can we be ready for that change? We stress communication skills. We recognize that diversity and expose the youngsters to it every chance we get. We think about the marketing, the direct sales, the value-added dimensions. We remind our students that areas such as food service can be exciting outlets for people.

We have recognized that in the last 20 years, large corporations in this country lost five million jobs, while small- and middle-sized businesses generated 40 million jobs. Therefore, we should emphasize innovation and entrepreneurship. I wanted to note that in one of our handouts today, it says vocational and technical education should stimulate development of entrepreneurial skills, which will result in job creation.

We're getting close to the end of the lecture, so it's time for the reading assignment: Innovation and Entrepreneurship - Practice and Principles by Peter Drucker (published by Harper and Row in 1985). Drucker is absolutely the guru of management science in the United States, and this is his most recent book. It is a great example of the literature available in this area. I think reading this will stimulate you to see how you can capitalize on things you are already doing to promote entrepreneurship.

I want to introduce you to two enterpreneurers who are here today. One is Jim Kahrs, Osage Beach, Ozark Fisheries. He is an entrepreneur; he told me that next

week, he will ship 10,000 three-inch catfish to Czechoslovakia. My friends, that is finding a market niche. He is selling Missouri corn and soybeans in a most interesting manner.

The second entrepreneur is Ron Macher. Ron used to raise hogs. We educated and graduated him to do that. He is adaptable, like Jim, and publishes "Missouri Farm." His subtitle is "Total Concept Small Farming, Gardening, and Rural Living." In his current issue, he cites a fellow down the road. Goat artificial insemination is a growing enterprise for Ron Neely and his wife Irene Wolf. What is Ron Neely's major if he is going to be in goat artificial insemination? Art history at Berkeley. What is Irene's strong point? Psychology. They are adaptable. He got started in this business 12 years ago. Now he has about 75 percent of the goat artificial insemination market in the United States. He lives at Ashland. He covers 25 states with two mobile units to collect from goats. He is in a unique niche.

Oh, how I wish you and I could pass that sense of opportunity and excitement and ability to identify a special chance to the young folks that we are going to be working with. My thanks to you for all the good things that you have been doing in leadership development and helping these young folks learn so much about finance, management, production, and agribusiness.

Trends, Issues and New Directions in the *Agricultural Industry* Affecting Agricultural Education— The Agribusiness Perspective

by
Ves L. Temaat
Vice President, Member Services
Farmland Industries

We constantly hear and talk about the rapidity of change in our society today. I doubt that anyone would argue that change seems to be happening faster every day. Electronics and communications have probably gotten most of the press as far as change in recent years. A new term has even been coined in recent years to describe these rapidly changing industries--"high tech."

While most people don't associate agriculture with high tech, we certainly are experiencing significant changes in agriculture today. Those changes are affecting, and will continue to affect, all of us.

I'm encouraged by the increase in dialogue and cooperation we are seeing between our educational system and the business community. This, too, is a change. Ten years ago, there was far too little of this kind of thing happening. We still struggle as a business to define and clearly state what we want the new employee, just out of school, to know. Schools are struggling and sometimes getting frustrated with an inability to develop what businesses apparently expect. We're both struggling, but we're both making headway; as we continue to struggle with this problem, we will develop a more clearly stated and understood goal of what we are both looking for. Closer cooperation and, more importantly, closer communication between education and business must take place.

Agriculture has felt, and is still feeling, the impact of a world recession, escalating production costs, high interest rates, declining land values, declining world exports, domestic grain surpluses, and a host of other problems that have tested the tenacity of the American farmer to hang on in the face of all adversity.

Agriculture and the American farmer will survive, but the shape of agriculture in the future will likely be vastly different from what we have known in the past. The ag producer is being affected by changes in these areas: operating unit size, land ownership, profitability, professional farm managers, vertical integration, and dependence on foreign exports.

Changes in these areas are forcing similar changes in agribusinesses serving the producer. Agribusiness can expect to deal with: larger business units, more technical knowledge and services, services oriented to larger producers, less fixed-asset intensive businesses, and a shift in the marketing role.

As these changes continue to take place, our vocational education system will be called upon to develop a more highly skilled employee. The future employee of agriculturally related businesses must have skills and knowledge in at least these key areas:

1. Skill and knowledge in dealing with people.
   Far too many people fail as leaders due to an inability to get along with others. We must do a better job of teaching the basic human relationships.

2. A better understanding of the financial side of a business.
   Knowing what it takes to produce a bottom-line result.

3. Individuals who are innovative and creative along with having a basic understanding of analytical processes.

4. A specialist but also a generalist.
   A broad business background that provides a foundation upon which to build.

There is little doubt we will see a different structure for agriculture in the future. Your group, as a guiding force in the vocational education process, will play a key role in how this structure will look and function in the future.

Trends, Issues and New Directions in the *Agricultural Industry* Affecting Agricultural Education— The Rural Missouri Perspective

by
Larry Harper
Editor
Missouri Ruralist

In 1959, I left Bates County, down in the western part of Missouri, and went to MU. I came home after a semester for the first time, and after supper, I said to my dad, "Dad, if you would have wanted me to stay on the farm, you should have never sent me to school." He looked right at me and said, "I didn't intend for you to." But I fooled him. A few years later, I bought my own farm and three tractors, two wagons, four disks and a couple of plows, a pickup truck, and 50 acres. I put that together with my ag economics degree. I got rid of that place, that is, the banker and I did.

When I left the home farm at 17, I had great expectations that I would be a part of agriculture because that was my heritage; it was natural that I would be. My perception was that agriculture and farming were one in the same, and I held very tightly to that perception for many years. With the help of my farming experience, which I told you about, and several incidents that I have observed in the last 20 years, my expectations have changed a bit, and so have my perceptions of agriculture. In more recent years, I have been able to put agriculture into perspective to see how it fits as only a piece, a rather large piece, but only a piece in that total social and economic environment that we live in.

My perception now is that agriculture encompasses all things rural. We cannot, and we should not, separate agriculture and farming from the rural scenes, although we seem to have done a mighty fine job of dividing up the turf up to this point.

A part of my change in perspective comes from studying some of the raw statistics. Sure, Missouri is the second state in the nation in number of farms, next to Texas. We're proud of that--112,000 of them. But I think that may be one of the biggest misperceptions that we continue to believe in. Only 23,000 of these farms in Missouri have an income from the farm of more than $40,000 a year, and that doesn't leave you much net to live on. Only 9,000 of them have an income of $100,000 or more from the farm. That's just barely enough when you stop to consider all costs and try to make a decent wage.

What about the other 90,000 farms? Where are they? They are still out there, and mark my word, they are going to be out there for a long, long time. They are not going to disappear; they are going to change. Those other 90,000, which represent many of the people that we're dealing with in education, are still going to be

there. We talk endlessly these days about increasing agriculture's political and economic strengths. Wouldn't it be better if we were to increase the total strength of rural America and rural Missouri so we have more opportunities, more choices, and more comforts for all of us? How can we do it? I think we would all agree that, in the end, we must accomplish this through the education of our youth. On one hand, we must prepare our rural youth to be a part of the world beyond the farm gate. In essence, we must help them leave the farm. Many of us in agriculture have the perception that we are separate, that we are different somehow from the rest of the people in the world. I think we must admit that our expectations can never be reached, if we do not assimilate ourselves into the total environment. We must gain the knowledge that's out there beyond the farm gate. We need to take advantage of the technology that's available in the world and bring it back to the farm--back to rural Missouri.

In our education system, in our vocational education system, perhaps this will mean deemphasizing production agriculture. I really think it will, especially on the high school level, but it may not at the postgraduate level. It also is going to mean, as you heard before, an increasing emphasis on the economic and social sciences.

I think that we have reached an age where production technology comes to us in a box, it's packaged. Production technology does not need to be, and can't be, taught in the volume it takes to each one of those people who need it. It's in the box, and it's in the instructions. It's on the label. It's packaged in a software package for a computer. It's available in the special courses you offer, and it's available in the farm media. Our challenge, as educators, and all of us are educators to a certain extent, is to teach our youth, especially our rural youth, to read . . . to read the labels, to know and understand the computer. Our challenge is to teach our youth to know where . . . to know where, when, and how to find those special pieces of information that we need when we need it. Then there are those other youths, the ones that don't necessarily come from the traditional farm background. These youths are not farm boys or farm girls, but people who are destined to end up in the rural community in rural Missouri. They will help us strengthen rural Missouri and give us all the opportunities that I talked about, the expanded opportunities. These young people will be a very valuable asset, simply because they won't have traditional thinking.

I want you to remember something. Remember, it wasn't IBM that brought you the portable computer, but a couple of oddballs working in a garage who came up with the Apple computer. Likewise, I do not think that it is going to be one of our best soybean or corn farmers who shows us how Missouri can compete with California in the specialty food market.

May I close by asking you a question? As you discuss the issues in agricultural education, as you try to pinpoint them, shouldn't you first ask, "Why are we serving?", and then ask "who are we serving?"

What Are the Possibilities?

by
Lowell Catlett
Associate Professor
Agricultural Economics & Agricultural Business
New Mexico State University

Thomas Jefferson said, "I like the dreams of the future better than the history of the past."

Someone once said that it isn't so important where you stand, but rather the direction that you move that really matters. The same is very much true today in agriculture. The new technical revolution is moving agriculture in a direction that few of us can believe. Agriculture is currently the largest industry in the U.S., employing 20 percent of the labor force and producing 21 percent of the Gross National Product--the new technical revolution will push these numbers even higher--some say an additional 3 percentage points on the GNP by the year 2000.

Where will this growth come from and in what areas? I think agriculture will move forward in three major areas: 1) Robotics, 2) Biotechnology, and 3) Information Management. Let's discuss each very briefly.

Robotics

In 1979, there were approximately 1,000 commercial robots in the U.S.; 1985 will end with approximately 15,000, and most forecasts call for at least 250,000 - 500,000 by the turn of the century. Robotics will replace many assembly-line jobs, hazardous material handling jobs, and "stoop labor" jobs in agriculture. In fact, agriculture will probably be the biggest user of robotic technology. The chip, of course, is responsible for the new interest in robotics. IBM announced during the summer of 1985 that it had made a one-million bit chip, and the end is not in sight. The U.S. Army is very close to having its VHS chip (Very High Speed) ready for use. New work in Japan on replacing the silicon chip with gallium arsenide chip also shows that "super" computers, and thus "super" robots, are possible within the decade.

Smart and "super" robotics means that agriculture can make great strides in additional mechanization and continued substitution of capital for labor. The average work week is projected to fall from 40 hours to 32 hours by the 21st century, due mainly to applications of robotic technology.

Biotechnology

Even more impressive than robotics is the new field of biotechnology. The most impressive biotechnology is, of course, genetic engineering. Other major advances are occurring, however, that are not in the genetic engineering areas. For example, the USDA's Agriculture Research Service recently announced a major breakthrough in bioregulators. These are chemicals that, applied to plants, increase yields and protein content. Early tests show doubling of yields and several percentage points increase in protein content in major crops such as wheat, corn, and other feed and food grains. Additionally, work on protoplast fusion over the last 10 years is now yielding major breakthroughs in crops. Some of the work includes:

1. Potato-Tobacco plant crosses--excellent potatoes that are late blight resistant.

2. Tomato plants that are salt-water tolerant.

3. Tobacco plants that don't have harmful tars and nicotine.

4. Work on plants that can produce oil.

The genetic engineering area is producing even more dramatic results. Major advances are occurring in changing microbes, such as:

1. Using Thiobacillus ferrooxidans to produce metals from ores--such as copper (10% of U.S. copper production currently from this technology), uranium, and other metals and products.

2. Microbes for control of pollution and sewage treatment. Microbes have already been developed that break down cyanide, dioxins, and polychlorinated biphenyls (PCBs).

3. Clostridium bacteria that produce large quantities of carbon dioxide are being pumped into oil wells and increasing production.

4. Microbes that control bacteriophages. Bacteriophages can ruin whole vats of cheese. Thus, the quality and cost of producing cheese can now be changed dramatically. Additionally, genetically altered yeasts are aiding the baking industry and brewing industry.

5. Enzymes have been extracted from fungi that attack and break down lignin, thus providing a big boost to the paper industry.

6. Single-cell proteins are currently being used for animal rations and promise to change the entire animal-feeding industry.

7. Microbes are being developed to break down lignocellulose and improve the efficiency of ethanol fermentation and methane production.

Genetic engineering is also being applied to producing drought-tolerant plants, disease-tolerant plants, and a whole host of other changes. Many changes are also occurring in animal genetic engineering to provide increased production, disease resistance, and more desirable characteristics. The application of genetic

engineering to humans promises to have most major genetically induced diseases eliminated, as well as diseases caused by viruses. In the process, humans are projected to live much longer and healthier, with the average age approaching 80 by the turn of this century and many living to the 90-120 age category.

Information Management

Because rapid advances are being made in computer technology and algorithms, the computer will provide many work tasks that have been impossible before. We will have access to information and the means to process that information into usable results such as management decision processes, electronic marketing, risk management, accounting and tax processing, and production management, to name only a few.

We currently use computers to do all of these things, but they are limited by size and speed, as well as information to input into the algorithms. That is all changing very rapidly. National and world information is becoming instantly available to more people and businesses through geocentric satellites. Advances in chip and computer technology mentioned earlier are making computers faster, larger, and cheaper.

Two interesting research areas that are currently underway promise to change agriculture even more. Efforts are underway to replace the mitochondria in beef cattle cells with chloroplastids from plants so that the cattle can harvest sunlight--solar cows. This is difficult because the process involves gene transfers from the plant kingdom to the animal kingdom. But the process has been speeded up with the announcement a few weeks ago that a protoza has been found that has a blue-green chloroplastid. Now it involves a gene transfer from animal to animal--something we have already done. The cows will no doubt be green! Also, work is being done on biochips--living chips that are much smaller than current chips and at least a million to a billion times faster than current chips. Biochips are projected to be commercially available by the mid 1990s. This moves robotics and information management into central focus much faster.

These three major areas of change, plus many others, promise to make agriculture even more exciting, larger--and most importantly--very different from what it has been and what it currently is. IT IS NOT DECLINING--IT IS GROWING AND CHANGING.

The rate of technical change for the next 20 years has been estimated to be at least 500 times the rate of the last 20 years. This puts considerable pressure on our education system in general and agriculture education in particular. We must be prepared to adapt and be flexible. As George Bernard Shaw once said, "We are made wise not by the recollections of our past, but by the responsibility for our future." Therefore, it's not so important where we stand, but the direction we move.

The Challenge

by
Doug Butler
Assistant Executive Director
National FFA Foundation

It is a real pleasure for me to be here this morning representing the National FFA Foundation and the nearly 1,000 sponsors who financially support the FFA. I bring you greetings on behalf of Carl Gerhardt, senior vice president of Alfa-Laval, Inc., our 1985 Foundation Chairman, and our staff in Madison, Wisconsin.

I would like to compliment each of you for being here. It's very encouraging to be here with so many progressive, forward-thinking people who have a sincere commitment to young people and the future of agriculture.

I would also like to commend Terry Heiman, Commissioner of Education Mallory, the steering committee members, and each person who had a part in setting up this conference. It is extremely timely.

We are also grateful to Missouri for doing such a fine job of preparing Dr. Larry Case to be National FFA Advisor. His leadership has been instrumental in getting FFA/Vo-ag on the national level into the strategic planning process. Under his direction, and working with guidance from a corporate strategic planning executive loaned to us by Pfizer, we are attempting to shape FFA's role and image throughout the rest of the '80s and into the '90s.

We realize that whatever we plan and do at the national level will have little or limited impact unless state and local ag education units are involved and moving in the same direction. Yesterday was very exciting for me because many of the same trends and issues that you have identified as important to deal with are the same ones that we have focused on at the national level.

During the next few minutes I've been given the responsibility of challenging you, but after yesterday, I feel like you've already been challenged and motivated. With that in mind, I'd like to reiterate a few of the insights we were given yesterday and tie in a little bit of a national perspective.

I thought Dr. Jim Knight's closing remarks yesterday were very appropriate in calling us to focus our attention on making a strong system better and keeping it from getting sick--and not approaching it as if we need to heal a sick system.

Perhaps a word of caution should be heeded though. Since we are working within a system that is already strong, and since change comes hard for many of us, we can naturally expect some resistance to any changes that we propose to make as a result of this meeting. If we do not communicate the rationale and basis for making changes, we can expect many to reject it as being some idealistic dreams from that "think-tank" down in Columbia.

In our office, we've calculated some projections on future vo-ag enrollments that tell us that by 1990 there will be an average of less than 12 "traditional ag students"--those coming into our program with a full-time production farming background--in each of our 8,300 chapters across the nation.

Yesterday, I kept hearing how near the national averages Missouri usually is. So, last night I put a pencil to some of the figures that we had been given and came up with the following projections. I know it's a lot to ask this early in the morning, but I'd like to ask you to mentally work through these figures with me.

Yesterday, we were told there are now 9,000 farms in Missouri with over $100,000 in income, which should give them sufficient operating margins to still be in business as full-time farms in 1990. How many traditional ag students can we expect those farms to produce for us?

- Assume that the operating managers range in age from 20 to 65 and that there is an even-age distribution among them (overly optimistic). It gives us a managing age span of 45 years. 9,000 farms divided by 45 years = 200 farm managers in each age bracket; i.e., 200 would be 25, 200 would be 45 years old at any given time.

Other assumptions:

- Average of 2 children per farmer, born 3 years apart.
- Both children enroll in Vo-ag/FFA and stay members for the full seven years (again overly optimistic).
- A time window of 10 years during which we could count on one/two students being supplied from a particular farm, i.e., first 3 years = 1 student, next 4 years = 2 students, last 3 years = 1 student. This averages out to 1.4 students/farm/year. Again, if we're overly optimistic, we can round up to 1.5 students.

These numbers compute as follows:

- 200 full-time farmers in each age bracket
  x
  10-year window of time with FFA member-age children
  x
  1.5 children per farm per year
  equals
  3,000 traditional ag students per year <u>maximum</u>!
  divided by
  245 FFA chapters in Missouri
  equals
  12.25 traditional members per year
  x 4/7 (only in school for 4 out of 7 years of membership)
  equals
  7 students per school.

Remember that this is an overly optimistic projection. How many school boards can justify a vo-ag department if it is serving only those 7 traditional students?

I don't believe we can wait another 5 years to begin "Shaping the Future of Agricultural Education." If we do, there may not be a future. We must begin to attract and serve the nontraditional student or we may not be around to continue to serve the traditional production ag student.

As Dr. Catlett so colorfully illustrated for us last night, there is a future in agriculture! But it's going to belong to those who are bright, innovative, self-motivated, and can adapt to change. Our system must attract people with that kind of potential and equip them with the appropriate attitudes.

We must prepare them for the ag careers of the future, not just the large commercial farms, but:

- Ag Service Occupations
  - Information management
  - Biotechnology
    - Japanese use of fiber optics with underground tomatoes
    - Bovine growth hormone
    - Plant genetics
  - Mechanization.

These developments and trends mean the end to some traditional ag career opportunities as we know them, but they also open up a whole new world of opportunity for those willing to pursue them. There will be a need for training in these new career areas. Someone will answer the demand and meet the need. I believe it should be ag education.

We must begin to actively serve nontraditional audiences.

- Adult students who are feeling the impact of technology and need retraining.
- Part-time farmers.
- Inner-city students.
- Women, an increasing percentage of the labor force.
- Minorities who will be the majority in many of the urban school districts within a few years. Most are very unaware of the opportunities that exist in agriculture/agribusiness.

We have an image problem to overcome if we expect to attract many of these people. I was visiting recently with the executive director of a major national corporate foundation. He had just made a presentation on how they were planning to increase their support to secondary education. When I asked him how much of that support would be directed to vocational education, he said, "Zero." He explained that according to the major national studies they were basing their analysis on, vocational education was not working. Many "vocational" graduates were not able to read or write, let alone hold a job.

He explained further that there were exceptions, noting that agriculture education and business and office education were looked upon favorably by the reports. "FFA works," he said, "and if I were you, I would begin looking at how I could distance ag education and FFA from vocational education as a whole."

As a traditional, conservative vocational educator, I find that hard to accept, but I definitely think he has a valid viewpoint. It should give us food for serious thought.

To many Americans outside our industry, agriculture is perceived as sick and dying. In the urban schools, we don't believe there will be much interest in becoming a "future farmer," but we do believe there will be a great deal of interest in becoming an agri-scientist, in learning about entrepreneurship, the free enterprise system, and leadership.

It's a matter of image. We need to project the positive image we want and not just let people assume what they want. We need to let the public know:

- Agriculture is an industry with an exciting, dynamic future, with challenging and rewarding career opportunities. It is making important contributions to the world and society.

- FFA/Vocational Agriculture is a sound system that works. It offers keys to those careers.

- Emphasize our strengths!

    - Work experience/SOE teaches entrepreneurship, applied finance, applied science, and math.

    - Interpersonal and communication skill development is what FFA is all about! We surveyed 18,000 former FFA members on what was the most valuable thing they gained from FFA. The top five answers were:

        1. Leadership
        2. Self-confidence
        3. Increased responsibility
        4. Public speaking
        5. Job skills.

    - Public sector/private sector partnerships are a viable, working part of our system. Advisory councils are incorporated at the local, state, and national levels. This meeting is a prime example of that type of cooperation. The National FFA Foundation shows the commitment that the private sector has to our program. This year, more than $2 million will be contributed in support of FFA programs.

In closing, my challenge to you today is to be creative enough to capture the potential that exists in ag education, but be practical enough to make it workable and useful at the local school district level.

Conference Summary—
What Have We Said?

by
Don Claycomb
Executive Director
State Council on Vocational Education

First of all, let me commend the steering committee and the leadership in the Department of Elementary and Secondary Education for a conference program that was timely, provided futuristic thinking, and was well organized.

The fact that I am a product of the system may have colored what I heard and how I heard it. I am here today because of the influence that experience had on me. On the other hand, I recently heard a speaker say that we evolve or we dissolve. Both this phrase and my experience in the program were on my mind as I listened and prepared my comments.

Commissioner Mallory opened the conference with a number of challenges. Basically, I heard him say that accessibility to vocational agriculture must be expanded, more kids need the FFA, and that we must make certain the program serving our number-one industry is strong.

The overall issue of the conference was not to cure the ill. The program isn't sick. Therefore, the issue is, what can be done to make what we have better?

There were some general philosophic challenges posed. We get what we expect. We must be bold. We must be willing to do things differently than we have in the past, if we are to lead agriculture into the 21st century.

A number of issues were discussed relating to the curriculum of vocational agriculture. In general, it was stated that the focus must expand beyond traditional production agriculture. The program must be relevant, and it must be made broader. The program should teach students to be self-disciplined, how to solve problems, and how to transfer learning. It was emphasized that entrepreneurship skills are an important part of the curriculum.

The FFA works. It is a part of the program that is attractive to many individuals, both rural and urban. By 1990, however, there will be, at most, 12 traditional students per chapter. Program flexibility must be increased, and names associated with the program should be looked at. It was also emphasized that agriculture must be a complete program, elementary through adult.

Program leaders and planners must involve the entire community. More active public/private sector joint activities should be conducted. Increased involvement of advisory committees was encouraged. The program must involve community leaders in determining community needs and in developing a program that meets the needs of employers.

Positive attitudes and creative thinking were common threads throughout the conference. As I floated from discussion group to discussion group, listened to conversation in the hall and at the meal tables, I felt a positive atmosphere, heard positive comments, and heard evidence of a tremendous amount of creative thinking.

What happens next? The statement was made that implementing change is tougher than proposing change. However, let us keep in mind it was also said, "The future isn't something we are going to discover, but something we are going to create."

Future Action—
Where Do We Go From Here?

by
Frank Drake
Assistant Commissioner
Division of Vocational and Adult Education
Missouri Department of Elementary & Secondary Education

I think we have had an excellent conference. When we first started planning this meeting, it ran through my mind that this was an excellent idea for all of vocational education. We intend to continue gathering groups of people together throughout the vocational discipline and doing something like this. I think it's time for Missouri to relook at our programs.

I want to thank the participants and all of you who came and made this conference a success. You have given us good counsel. We want to thank you for your time, your energy, and your efforts. I want to thank the steering committee, and especially, I want to thank our agriculture staff. I don't know if you know how much work has gone into producing this conference. Dr. Heiman, Doug Funk, Gene Eulinger, G. W. Hamby, Steve Brown, and Norman Rohrbach have done a tremendous job.

I think it has been said, and I truly believe, that we have a strong vocational agriculture program in Missouri. I have been an observer of it for a number of years. We didn't start out with the idea of coming here and throwing the whole program away by using this conference as a vehicle. We already knew we were good and strong, but we set the conference theme of "Shaping the Future of Agricultural Education" as something that we could improve our programs with. We always have to ask ourselves, and I think we did in this conference, "What needs to be changed?" The answer was clear to me: "Yes, you can improve, and you can improve through changes."

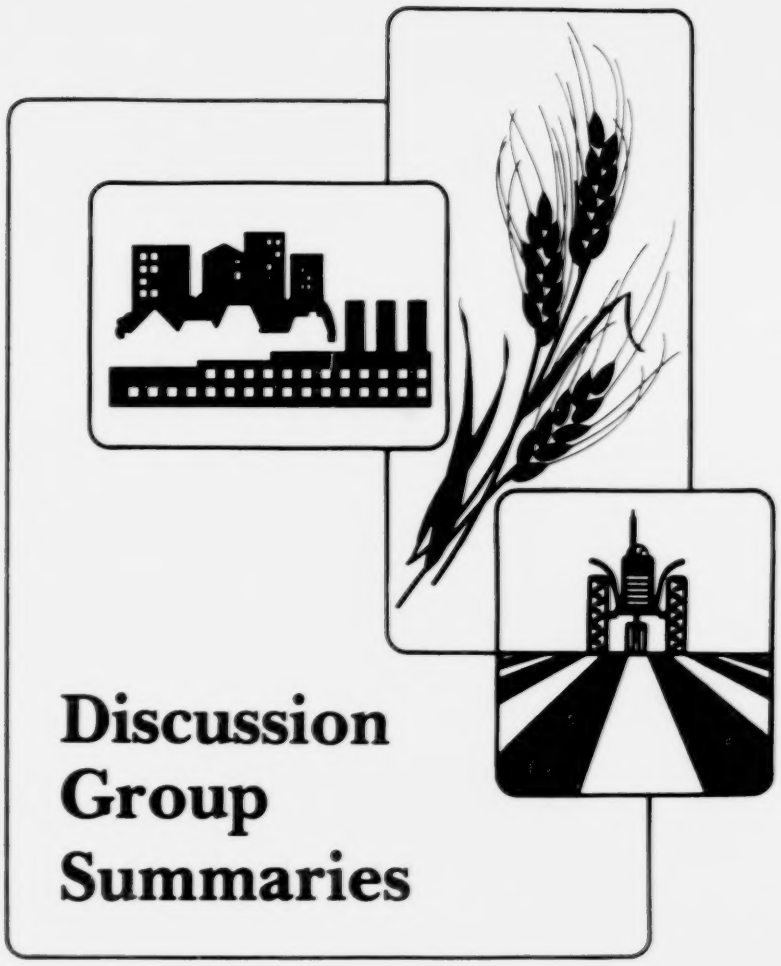
Now, I'm not a guy who just fell off a turnip truck. I know we're going to have some strong advocates for change. Our staff is going to be, and some of you are going to be. At the same time, though, I know we are going to have some resisters to change. You know it is comfortable to keep on doing the same old thing. We have to be real disciples as we shape our future and vocational agriculture--to persuade and to arm-twist where necessary to get changes in place that will improve our program.

Some at this conference said, "Yes, there are some things in program design that we may need to improve on." I heard some things about the curriculum. I know those of you who are teaching a four-year program have your buckets full already. You are going to need to look down in the bucket to see what's important enough to be taught and then see what's left over. What can we throw out, and what can we

include in this change process? There will be some hard and agonizing decisions. We can't talk about change without thinking about decisions that are going to have to be made.

We have to implement changes, and when we get to that stage, that's where the real tough decision making will be done. We'll involve you with it. In addition to curriculum change, I heard people saying that we've obviously got to be thinking about changing the way we prepare our teachers in our preservice teacher preparation programs.

We talked about inservice programming. If we make changes, if we broaden the base, we are going to have to be sure the teachers are prepared. I think we have a tremendous opportunity here. I think it is good that we have the Carl D. Perkins Act. I know a lot of people have viewed it with some apprehension, but remember that 43 percent of our federal dollars call for program improvement and innovation. This is a time for us to start making those program improvements. Our Department flows out 80 percent of those federal dollars in the Title II, B programs for innovations and improvements. The Excellence in Education Act can also help us make these kinds of changes. Rest assured that our staff, along with you, will study the recommendations. We will do it in a deliberate and purposeful way to improve vocational agriculture education in the future.



Discussion Group Summaries

Secondary Agricultural Education in the Public Schools
Rural Schools

This mission statement was adopted by the committee:

> Educate all students about the agriculture (food and fiber) industry with emphasis on preparation for careers in the industry and the development of leadership skills which will apply to any area of society.

Issue 1: Identify and describe the mission of agricultural education as a part of the rural public school.

Question: Should agricultural education be offered to interested students in all rural high schools of Missouri?

Response: All students should have access to the program. All students should take a general agriculture class somewhere in the school system, but the present system of funding may be to rigid too offer general agriculture.

The facility requirement may be a barrier to schools desiring to offer the program. The facility only needs to reflect the program offered.

There must be a cooperative effort developed among school districts to share teachers and/or facilities to enable more students to have access to the program.

Even though agriculture is changing, there will always be a need to teach production agriculture in the programs.

Question: How can we ensure that students will have the opportunity to enroll in vocational agriculture considering the new emphasis of education in the academic areas?

Response: We must assure that both college-bound and work-oriented students have the opportunity to take agriculture courses.

Continue to grant a science credit for three years of vocational agriculture.

If a local school has weighted classes, then certain advanced vocational agriculture classes should receive heavy weighting. Class rank should not be adversely affected by taking a good vocational agriculture class.

Question: Considering the changes in agriculture, what should we be teaching?

Response: The program must adapt to the needs of the local community, but the production, processing, and distribution of food and fiber should be a part of every program. There is a need to broaden the program to include more than production.

Personal-development skills are some of the most important skills we teach. Many of these are not available in other courses. Also, continue to emphasize reading and writing skills.

Do all agricultural education courses have to be "vocational"? All students need to have exposure to general agriculture. Agriculture topics and examples should be taught in other classes, such as, the math teacher using the universal soil loss equation.

Question: Is there an adequate amount of instructional time spent on careers?

Response: Agricultural careers should be explored in greater detail in the curriculum. More time should be devoted to careers.

Question: How much instructor time away from school and classroom teaching is needed?

Response: It is highly desirable to utilize business and industry examples in teaching. Teachers should be encouraged to bring individuals to the students rather than taking students to them.

Alumni can be utilized for supervising field trips or teaching class while the instructor is gone.

Programs should and do use evenings and weekends as much as possible for workshops and other activities, although there is great variation throughout the state.

School time should be utilized for area, district and state judging contests, but should not be used for workshops leading up to these.

Question: How can we improve the public's awareness and perception of agricultural education?

Response: Broaden the base of the program, both subject matter and students.

The agriculture teacher should be involved in community activities.

Provide workshops for agriculture teachers to become better prepared to promote agriculture programs. Teachers may need undergraduate work in journalism.

Question: How will the changes in agriculture affect the program?

Response: There will be fewer students unless the program is broadened, and then specialized courses offered as the local program demands.

As fewer students come from rural backgrounds, there is more need for every student to have awareness and appreciation of agriculture.

There is a need to stress the individual leadership skills training.

Question: How can extension education and agriculture education cooperate with each other?

Response: Encourage continued cooperation between the groups. Extension provides excellent resource personnel for various educational activities.

Issue 2: Identify the type of program which will allow for the accomplishment of the agricultural education mission in rural Missouri.

Question: What are the characteristics and needs of students in rural Missouri?

Response: There are fewer farm students, but more with dual career goals--including part-time farming.

Students will have more opportunity in agribusiness, but with limited background, they need instruction in agricultural production as well as agribusiness. They will be entering agriculture at different levels.

With a depressed agriculture economy, there is a greater need for public relations and image improvement. The program is missing some students who should be there.

Question: What is the program presently doing that is correct?

Response: The program has always used the problem-solving method of teaching which follows closely with excellence in education and performance based teacher evaluations. Critical-thinking ability is a must for students.

Continue to teach the work ethic, communication skills, and student initiative. These are very desirable traits.

The program is presently teaching management and entrepreneurship. There is a need to emphasize management and marketing skills.

Year-round programs in vocational agriculture are very important. There is a need to tell people why.

The "four-year concept" for vocational agriculture is excellent, and we recommend it, but there is a need to be flexible to allow upperclassmen to enroll in upper-level courses without prerequisite courses.

Question: Is the agricultural education teaching method and curriculum effective, and how can it be improved?

Response: The basic program is effective, but local advisory committees should review curriculum content annually.

The current system and methods have an image problem which should be dealt with.

Careers should be emphasized to show students what is available.

There may be a need to teach more about rural community economics principles, such as the interaction of production agriculture and agribusiness.

There is some duplication of curriculum between high school and college level, but repetition is necessary and advantageous.

Question: Is the supervised occupational experience (SOE) program effective, and how can it be improved?

Response: SOE is a must in the vocational agriculture program. It is an extension of the classroom and an effective way for students to learn agricultural principles.

SOE should be flexible to recognize nontraditional programs. It will also need to change as agriculture changes.

Record keeping must be incorporated into the program.

Question: Is the leadership and personal development portion of the program effective?

Response: This portion of the program is very effective and probably is one of the most important components.

There may be a need to allow students who can't enroll in an agriculture class to continue membership.

Question: Are there barriers that discourage students from enrolling?

Response: Yes. Image is a barrier. Most students think vocational agriculture is just farming. A name change to Agricultural Technology might help.

Scheduling graduation requirements and college entrance requirements are perceived barriers to vocational agriculture enrollment.

Counselors and parents do not understand the program or the opportunities it offers to students.

Some districts do not offer the program.

Question: How can we recruit and retain students?

Response: Agriculture teachers must be aggressive in recruitment of students, in working with counselors, and with informing the public about the need for agricultural education.

Question: How important is state-of-the-art equipment?

Response: Up-to-date modern equipment is necessary to give students hands-on opportunities.

Exposure to computers is important, but care must be taken to not let computers replace the basic skills and thought processes that students need.

There may be a need for more video equipment use while teaching personal skills development.

Question: Should courses in vocational agriculture which provide substantially the same competencies as other "required courses for graduation," be allowed to meet a requirement toward graduation?

Response: The present allowance of science credit for vocational agriculture courses is justified and should be continued. Program managers must be accountable and educate the public.

Issue 3: Identify the leadership and the resources to be secured for effective implementation of the agricultural instructional program in rural Missouri.

Question: What is the role of advisory committees?

Response: They are underutilized. They should bring education and industry together. It is important they be set up properly and their purpose clearly understood.

Agriculture teachers may need to be better trained on how to utilize them and be open to constructive criticism.

Meetings may need to be breakfast meetings or lunch meetings so they won't compete with night activities of members.

Question: What type of cooperation from industry is needed in agricultural education?

Response: There is a need to utilize more resource personnel from industry, but to be careful if it requires students to be gone from class.

Local advisory committee members may need to be used as resource persons in the classroom.

Question: How can we gather support from counselors, principals and the public?

Response: Need to do a better job of public relations. This may include, but not be limited to: conducting follow-up studies and releasing results; promoting agribusiness career opportunities; possibly changing the name of the program; and publicizing high technology in agriculture.

We should encourage upperclassmen who have not taken the prerequisite classes to take an advanced class as an elective.

Some felt agricultural mechanics may be stressed too much.

Question: What opportunities do declining school enrollments offer agricultural education?

Response: There is a need to change our image, to aggressively recruit students, and for instructors to market their program.

Question: Is funding a problem for those schools wanting to begin a program in vocational agriculture?

Response: The minimum facility requirement may be a barrier to some districts. Shops may not be needed for all programs.

Encourage districts without programs to share a teacher with a district presently offering the program. Area schools may be able to assist in coordinating programs for sending schools.

Question: What are the trends in funding for maintaining vocational programs in rural comprehensive high schools?

Response: There was discussion about the number of students necessary to begin and maintain a vocational agriculture program and why the amount of money from the state is different than for area schools with similar problems.

Private industry is now assisting with some funding of educational programs, but mostly at insitutions of higher learning. This may be an option that shouldn't be overlooked.

Secondary Agricultural Education in the Public Schools
Urban Schools

This mission statement was adopted by the committee:

> The mission of the program is to provide exposure and awareness about, as well as preparation for, agricultural career opportunities for secondary urban students.

Issue 1: Identify and describe the mission of agricultural education in the urban setting.

Question: Who should be served by courses of agricultural education in urban areas?

Response: All urban students deserve the opportunity to be involved in agricultural education.

In order to attain a substantial increase in the number of students studying agriculture at the secondary level, urban students must be involved.

FFA is a definite strength of the total program, but changes in terminology should be addressed to reduce negative connotations held by urban students.

Question: What should be taught?

Response: The program should continue to stress leadership training, parental involvement, FFA philosophy and motivational techniques. The home/parents must play a vital role in the program.

Maintain the focus of agricultural education while adapting to the needs of urban students.

Continue to expand instruction about nonfarm careers in agriculture.

Question: What needs of business and industry should be met?

Response: Continue to stress quality basic skills.

The program should capitalize on the interpersonal relationships factor stressed in agriculture programs from the industrial perspective.

Issue 2: Identify the type of programs which will allow for the accomplishment of the agricultural education mission in the urban school setting.

Question: What types of programs have been successful in other urban areas?

Response: Dr. Summerfield presented the magnet school concept utilized in the Chicago High School for the Agricultural Sciences.

A wide variety of courses for the urban student are possible. The program must be based on community needs, student interests, and program objectives.

Question: How important is Supervised Occupational Experience (SOE)?

Response: SOE must be a part of the agricultural education program in the urban setting. There are many possibilities for SOE in the urban setting, and the co-op program is one option.

Question: How can others become involved in the program?

Response: There is a need for strong advisory committees.

Utilize business and industry people as resources for the program.

Placement of good students in business and industry makes possible good public relations for the program.

Agriculture teachers should work more closely with teachers of other subjects.

Issue 3: Identify the leadership and the resources to be secured for effective implementation of the agricultural instruction program in the urban setting.

Question: What structures of implementation of agricultural education programs have succeeded in other urban areas?

Response: Magnet schools are probably the most popular. They offer a more positive image and offer more recruitment possibilities.

There may be a need to develop new options or structures for offering the program.

Question: How do we recruit teachers who are familiar with subject matter and the program and still able to work with students from vastly different social backgrounds and environments?

Response: The teacher is the key element in program operation. It is important for teachers to have a student-centered philosophy.

There is a need for positive role models.

Question: Are there curricular barriers to incorporating agricultural education?

Response: There are many barriers to overcome. Several have been addressed elsewhere in the report. They must be addressed on a district by district basis, but they can be worked with.

Question: What is the relation of other teachers and the community to the program?

Response: It is important to work with counselors, other teachers, and administrators in program operation.

Community leaders should also be involved in program development.

Secondary Agricultural Education in the Public Schools
Area Vocational Technical Schools

Issue 1: Identify and describe the mission of agricultural education as a part of the area school.

Question: Should agriculture be offered in all area vocational schools?

Response: The individual school district should assess the student needs and develop a program accordingly.

More nontraditional programs should be implemented to attract new students.

Question: What is the best delivery program for sending school students, i.e., satellite teachers for the freshmen and sophomore years at sending schools?

Response: More satellite instructional programs should be investigated, and team teaching with other disciplines needs to be initiated.

The use of advanced technology should be explored in reaching sending schools (TV, video, etc.).

Question: Considering the increased graduation requirements and their demand on a student's schedule, plus the increasing high-tech nature of agriculture, should we consider adding a 13th year of advanced instruction in agriculture?

Response: A 13th year is a duplication of training already being offered by community or junior colleges and adult programs.

One science credit should be received for a combination of specified vocational agriculture courses.

Schools are urged to have a seven-period day.

Question: What type of vo-ag program should be included at the area school, i.e., traditional, ag business, specialized mechanics, etc.?

Response: A shift from production agriculture to a careers-based program needs to be encouraged.

Programs need to allow more flexibility and be receptive to change.

The instructional effectiveness of the FFA program should be emphasized.

Question: What additional learning experiences should the AVTS provide in agriculture?

Response: Individuals need to inform students of employment opportunities in the field of production/agribusiness to help prepare students for employment in the broad spectrum of occupations in agricultural industries.

Students should be allowed specified advanced courses without completing Agricultural Science I and II.

Opportunities should be provided so that students and adults may enroll in courses of interest to them.

Sufficient basic knowledge of production agriculture transferable to all areas of agricultural industries should be included within the program.

The FFA needs to continue to incorporate leadership development as an intracurricular activity.

Issue 2: Identify the type of program which will allow for the accomplishment of the agricultural education mission in the area school setting.

Question: What are the characteristics and the needs of area school students (background, special needs, etc.)?

Response: All interested students should be accepted into the program, including gifted and handicapped.

The use of independent study for the gifted and exceptional students is an avenue to be explored.

Question: Is the teaching method and curriculum effective, and how can it be improved (i.e., 1-2 versus 3-hour blocks, production-oriented versus agribusiness, etc.)?

Response: The curriculum needs to be developed and improved to reflect more basics, communication skills, and agribusiness.

Obtain ideas for new courses by asking for help from the business community and/or advisory council.

The use of Carl D. Perkins funds to provide further inservice for instructors should be utilized (i.e., agribusiness training).

Priorities in agriculture need to be identified.

Question: Is the supervised occupational experience program effective and how can it be improved? Special problems include distance for supervisory visits and placement for work experience.

Response: Inservice for teachers to become more responsive in agribusiness supervision and other areas needs to be provided. College credit should be considered.

The SOE program should include agribusiness internships and continue as a part of year-round programming.

50/50 matching money for travel and SOE visitation should be continued.

12-month programs to encourage development of a student SOE is necessary in all programs.

Question: Is the leadership and personal skills development portion of the program effective and how can it be improved? Special concerns include: students from sending schools don't feel they belong; many FFA awards can't be realized in a two-year program.

Response: FFA awards should be adjusted and adapted to allow for juniors and seniors who were not in vocational agriculture their freshman and sophomore years to participate.

More awards in nonproduction agriculture should be recommended.

Question: How can we recruit and retain students and encourage instructors to do it, even when they are removed from the sending district?

Response: Each program should develop a recruitment program, policy, and budget.

Recruitment brochures need to be developed for agriculture careers for both the area and sending schools.

Students should be allowed to take nonvocational courses while at the AVTS.

Issue 3: Identify the leadership and the resources to be secured for effective implementation of the agricultural instructional program in the area school.

Question: How can we get sending schools to feel they are a part of the area school program without feeling they have lost ownership and pride in their own community's program?

Response: The AVTS should develop ongoing programs to establish the fact that the AVTS is a part of all sending schools.

Members of sending school districts need to be included as part of AVTS advisory committees.

Programs should be provided to civic organizations in sending communities.

Question: What barriers cause students to not be sent to area schools (i.e., transportation, loss of time, lack of participation in area school activities)? How can these be reduced or eliminated?

Response: More support should be provided for alternative funding sources.

More satellite programs (sending the teacher to the students) need to be considered.

A student's educational opportunities should be the same regardless of geographic location.

Question: How can we better inform counselors, principals, and the public so they understand the opportunities students have in the program, i.e., agribusiness and agricultural mechanics? Many public relations items do not reach the outlying areas.

Response: These people should be actively involved in the program as resource people or on advisory committees.

Each program should use available films, career days, resource people, and other means to inform students of career opportunities.

Question: Does funding pose a problem for those schools not presently offering the agriculture program?

Response: Funding is a problem for schools not presently offering a vocational agriculture program.

Vocational education funding needs to be reviewed so that a student's educational opportunity is not limited by his/her place of residence.

The current financial delivery system for all vocational courses needs to be studied.

Question: How can we better assist students in scheduling vocational blocks of time, considering the increased graduation requirements in many schools?

Response: More cooperation between vocational and academic teachers on credit requirements should be encouraged.

Credits should be offered through the vocational agriculture program based upon the number of overlapping course objectives to meet high school graduation requirements (i.e., award credit or partial credit for math, science, language arts or fine arts).

Postsecondary Agricultural Education in the Public School System

Issue 1: Identify how and where postsecondary education fits into the overall objectives of agricultural education.

Question: Who should be served by postsecondary agricultural education?

Response: Clientele served by postsecondary agricultural education should include, but not be limited to, the following: those wishing to supplement existing skills, those preparing for employment, those interested in agriculture as an avocation, transfer students, persons retraining in an agricultural field, and persons upgrading current skills.

Question: What is the mission and purpose of postsecondary education?

Response: Postsecondary agricultural education should provide students with knowledge and skills to become entrepreneurs, to secure employment, to maintain employment, and to advance with experience in agriculture-related occupations that require education beyond high school, but less than a four-year B.S. degree.

Programs should provide training and education necessary to meet the increasing technological demands of agriculture-related industry while building upon competencies obtained from secondary education or from experience.

Question: Do postsecondary instructors need to be trained differently from secondary or adult teachers?

Response: Postsecondary instructors need the same basic training that secondary and adult teachers receive, but they also need a continuing program of inservice education.

Question: How should postsecondary programs be financed?

Response: State funding for postsecondary education programs should be enhanced.

Resources of business and industry should be used, as well as Department of Elementary and Secondary Education customized training funding and JTPA funding.

Question: Where should postsecondary programs be located?

Response: Postsecondary education should be delivered by community and junior colleges and technical schools.

There should be statewide coordination for program development to avoid duplication and to fill voids within areas of the state.

Question: Should postsecondary instructors be employed on 12-month contracts?

Response: Postsecondary instructors should have 12-month contracts so they have time to supervise students placed for occupational experience.

Question: How should postsecondary education programs be marketed?

Response: Both recruitment of students and publicizing of the postsecondary program need to be done on a continuing basis.

A positive attitude must be created toward the postsecondary programs. High school teachers and counselors must be informed about the postsecondary programs.

Graduates from postsecondary programs and businesses who have hired graduates need to be involved in the student recruitment program.

Issue 2: Identify the areas of instruction that should be offered on the postsecondary level.

Question: How should the postsecondary programs be articulated with four-year institutions?

Response: Individual postsecondary programs should develop articulation agreements concerning transfer of credits with four-year colleges and universities.

Question: What should be included in the postsecondary curriculum?

Response: General education requirements should be reviewed by program advisory councils and staff to make certain that the required classes are applicable to a student's program.

The curriculum should include a study of government regulations related to the course content (Example: regulations regarding grain elevators).

Students should study basic computer usage as a part of their curriculum.

Personal and professional development should be an integral part of the instruction.

Businesses should be involved in curriculum development through the use of advisory councils.

Issue 3: Identify the role of work experience internship in the postsecondary program.

Question: Should work experience be a required part of the postsecondary curriculum.

Response: There should be an internship period, but flexibility must be allowed for special cases, such as part-time students, students who already have job experience, students enrolled for avocational reasons, etc.

Issue 4: Describe the importance of leadership development in the instructional program.

Question: Should leadership development be an integral part of instruction?

Response: Students should be encouraged to participate in activities to develop leadership and management abilities in agriculture through local, state, and national youth group activities.

Adult Agricultural Education in the Public School System

Issue 1: Identify the objectives of vocational agricultural adult education.

Question: What should be the main objective of adult education in vocational agriculture?

Response: To provide continuing agricultural education for adults that will serve to enhance and improve their quality of life, while also meeting the needs of the community.

Question: What groups should be served?

Response: We should serve the needs of those involved in commercial agriculture, including full and part-time farmers, small farmers, and specialty crop and livestock farmers.

We also should serve persons with avocational interests, and retired and displaced farmers.

Question: Should all vocational agriculture programs have an adult component?

Response: All vocational agriculture programs should be encouraged to include an adult component, however, it should not be required.

Question: Is adult vocational agriculture education too production-oriented?

Response: Our adult programs probably are too production-oriented, and program needs should be determined primarily at the local level.

Question: What should we offer for the part-time farmer or persons with avocational interest?

Response: In addition to normal production and management education, we should help them develop leadership and "people" skills, and provide information on production of specialty animal and crop enterprises.

Issue 2: Define the best structure for an adult education program.

Question: At present, some schools have percentage-time adult teachers and others offer only supplemental classes. Is this system adequate?

Response: Yes, the present system is adequate, but percentage-time adult teachers should be encouraged to get at least half-time adult assignments as soon as possible.

Question: How can departments of vocational agriculture be organized to do a better job of serving the needs of the local community?

Response: They should become more aware of the needs of the local community by using general advisory committee input and using community surveys, etc.

Question: What types of adult classes should be made available?

Response: Topics classes, indepth or series classes, and Farm Business Management Analysis classes should be offered.

Question: How should the state determine curricular emphasis in developing courses and materials for adult education? (Example: Should income factors identified through the FBMA record analysis play a role?)

Response: Curricular emphasis should be determined by using advisory groups from the community including extension people; government; religious and social groups; commodity groups; agribusiness people; lenders; and the traditional farm community.

Question: Should adult vocational agriculture programs be offered in schools that do not have a secondary component? If so, how should this be done?

Response: Pilot programs should be offered in schools with no secondary programs where there is a need and demand.

Question: Should adult instructors be shared between schools?

Response: Adult instructors should be shared between districts, if such an arrangement would be advantageous and the local districts can work out the details.

Issue 3: How can we do a better job of preparing both new and existing teachers to teach adults?

Question: How can the preservice instruction in adult education be strengthened?

Response: Preservice instruction in adult education needs to include more training in "people skills" so instructors can better evaluate and understand the needs of adults and work more effectively with them.

Question: How can we best prepare teachers to "be ready" to work with adults?

Response: Same as above, plus an emphasis on "people skills" in inservice education for instructors.

Question: Should vocational agriculture instructors be encouraged to teach more adult classes on their own?

Response: Vocational agriculture instructors should teach subjects in which they have a strong background and should use resource persons for instruction on other topics.

Issue 4: What will make the Missouri Young Farmers/Young Farm Wives organizations more effective in the education and leadership development of young adults?

Question: What would help make state activities more worthwhile and accessible to members?

Response: The State Young Farmers/Young Farm Wives Convention should be shortened to two days and held on the weekend to accommodate working persons.

Question: Should the two organizations consider consolidating into one combined group?

Response: The organizations should continue until the executive committees see enough possible advantages in a merger to warrant studying the issue.

Question: Is "young farmers" the right name for the organization?

Response: At least for now, "young farmers" is still the right name for the organization.

Question: What are ways to provide leadership training for adults?

Response: All vocational agricultural programs with adult components should be encouraged to sponsor a Young Farmers and/or Young Farm Wives organization.

Issue 5: How can adult programs be made more effective?

Question: How can adult education programs in vocational agriculture and extension programs work together to strengthen both and better serve the community.

Response: Adult vocational agricultural instructors and extension staff should work together and cooperate for the benefit of both groups and to prevent the duplication of services. They should participate on committees and cooperate in class and activity planning.

Question: How should adult education programs be promoted?

Response: Community leaders should be made aware of what the adult education program has to offer. All existing media (newspaper, radio, bulletin boards, etc.) should be used to advertise and promote vocational education adult programs.

The Development of Professional Teachers of Agriculture

Issue 1: Providing the background and experiences needed by vocational agriculture teachers in preservice education.

Question: What background and experiences are needed by vocational agriculture teachers?

Response: Teachers need to be prepared in a broad base of agriculture in the certification process at the B.S. level.

Question: What are the crucial competencies required of vocational agriculture teachers?

Response: Competencies most needed are communication and interpersonal skills and ability to teach, followed by professional and technical skill training.

Question: How can we recruit competent and committed persons to be vocational agriculture teachers?

Response: Find ways to make teaching more attractive so that we recruit and retain quality people.

Question: How can needed background experiences be provided in the inservice program?

Response: In addition to ongoing courses, provide appropriate internships in areas where a student has no background or training, especially in the agribusiness area.

Issue 2: Providing for increased training in agribusiness.

Question: Does a review of the objectives of students enrolled in vocational agriculture indicate a need for added emphasis in areas other than production agriculture?

Response: The distribution of objectives seems to indicate teachers need more training in agribusiness, both at preservice and inservice levels.

Question: How can more agribusiness be taught in an already loaded, preservice curriculum?

Response: Possibly the hours now required in present professional and technical courses could be adjusted to allow additional agribusiness training.

Delay some professional coursework until teachers are on the job and tie it in with inservice career ladder training. Some teaching methods may be more appropriately taught at this time.

There is a need to include practical salesmanship and retailing as a part of both preservice and inservice training.

Issue 3: Keeping vocational teacher educators current with new and changing technology and instruction.

Question: What are some ways to periodically update teacher educators?

Response: Teacher trainers can lose sight of the problems facing teachers in the local schools the longer they are away from the classroom.

Teacher educators should periodically work in agribusiness to give credibility to preservice and inservice instruction.

Question: How can partnerships with business and industry be formed to supply internships that will help update teachers in specific areas?

Response: Explore ways to develop partnerships with agribusiness, industry, government agencies, local education associations, and others who can provide training opportunities.

Question: How feasible is it for schools to allow sabbaticals or leave time for teacher internships (summer, school year, etc.)?

Response: The career ladder concept in Missouri's Excellence in Education Act seems to support this as a viable option for inservice programs.

Issue 4: Keeping instructors current with the rapidly changing technology, economy, and needs of agriculture.

Question: What are some ways to provide the training needed to keep teachers up-to-date?

Response: It is almost a necessity that some type of internship or work experience be part of inservice training.

The Carl Perkins Act supports personnel development activities.

Question: What are some resources for training?

Response: The Missouri Business Council would seem to be a logical resource in locating and identifying businesses that could help update instructors.

Local agribusinesses should be approached for help.

Major industry and business companies should be considered resources.

Structured employment or work experiences that provide updates in technology, agribusiness, and agriculture should be a part of both preservice and inservice education.

Issue 5: Providing for academic, professional, and technical excellence in a limited, four-year time frame for preservice education.

Question: How can a balance of courses be maintained to ensure reasonable teachers success?

Response: With the climate of "back to the basics," it appears that academics will continue to be emphasized.

The need for broad-based training probably precludes any adjustment in academics.

Perhaps some of the professional courses now required in preservice could be delayed until inservice. The Excellence in Education Act encourages continuing education. Some methods courses may best be taught after a teacher is on the job.

Question: Should students have more flexibility to transfer credits between and within disciplines in meeting certification requirements?

Response: Explore the possibility of adjusting required hours in professional and technical courses to make room for new content.

Explore the possibility of greater flexibility in allowing credit transfer across disciplines when offerings are equivalent.

Question: Is there a need for a five-year certification program to give time for added coursework?

Response: This appears feasible, however, the added financial burden on students may be too much. Are funding sources (grants, aids, loans, etc.) available to encourage this concept?

Issue 6: What should be the nature and extent of certification for vocational agriculture teachers?

Question: Should teacher certification be specialized beyond the two certificates (production and horticulture) offered now?

Response: All teachers need to be prepared in a broad base of agriculture in the certification program at the B.S. level.

Look at the possibility of increasing specialization at the graduate level.

Question: What is the possibility of forming a pool of teachers with expertise in certain areas which others could draw upon?

Response: The feasibility of this concept should be evaluated.

Agricultural Education in the Total Public School System

Issue 1: Identify and describe the mission of agricultural education.

Question: Who are the clientele to be served by agricultural education?

Response: All students in grades kindergarten through 12 should be included in agricultural education.

Adults, including parents, teachers and other interested people in the community, should be included in agricultural education.

Question: How do we develop the vocational agriculture program to effectively meet the needs of a diversified student population, and how do we develop the articulation and program flexibility to provide maximum educational opportunities?

Response: Agricultural education should be a complete program that includes the following parts:

Grade K-6 - Awareness Program including Conservation Department materials, Ag in the Classroom materials and locally developed materials.
Jr. High - Exploratory Program
High School - Career preparatory courses in vocational agriculture.

All teachers and principals should receive training in preservice and/or inservice classes.

Incentives should be offered to school districts using the complete agricultural education program.

High school students should be allowed to substitute certain vocational agriculture courses for courses in other subject matter areas such as mathematics, science and economics--in order to meet graduation requirements.

Small school districts should consider sharing one teacher to be sure the needs of their students are being met.

The local vocational agriculture instructor should help other teachers develop curriculum and teaching materials to work into existing courses such as science and social studies.

Question: How can resources be identified, acquired and used effectively?

Response: Local business and community leaders should be contacted and invited to help teach in areas where they have expertise; for example, a nursery operator could teach horticulture or a CPA could discuss record keeping.

The local vocational agriculture instructor should be a resource person and should make materials available to other teachers.

High school vocational agriculture students can teach and distribute materials to elementary students, similar to the way FFA chapters are presenting the Food for America program.

Teacher trainers need to work more closely with the journalism departments at their universities to make graduates more aware of agriculture and its impact on our society.

Local vocational agriculture instructors need to work closely with the local media to educate the public about agriculture.

Money is needed to maintain existing vocational agriculture programs and to start new programs.

Agriculture is the number one industry in Missouri; agricultural education must be adequately funded so it can help maintain that position.

Question: Should production agriculture remain as the basis of our total vocational agriculture program?

Response: Production agriculture and agribusiness should be the basis of the vocational agriculture program.

Increase emphasis in the areas of agribusiness and horticulture.

Question: What facilities are needed to adequately serve students in a vocational agriculture program?

Response: For certain career options, students could be adequately trained in schools without shop facilities.

More schools need to build greenhouses.

Issue 2: Identify the role of supervised occupational experience in the vocational agriculture program.

Question: What is the role of supervised occupational experience and how can it be used to carry out the mission of agricultural education?

Response: Vocational agriculture instructors should make better use of SOE by expanding into nontraditional areas such as home gardens, lawn care, etc.

SOE should be emphasized because the program makes vocational agriculture students more attractive to employers.

Issue 3: Identify the role of student organizations in the vocational agriculture program.

Question: What is the role of student organizations and how can they best be used?

Response: FFA provides leadership training that is unequaled elsewhere in the school system.

FFA should remain an integral part of the vocational agriculture program and should remain limited to students of vocational agriculture.